

ABSTRACT

FLATT, ELIZABETH NICHOLE. A Really Big Change in the World: Understanding Children's Perspectives about COVID-19. (Under the direction of Drs. Amy Halberstadt and Lynne Baker-Ward).

The COVID-19 pandemic required children to adjust to dramatic changes in their everyday lives, which had implications for their education, peer relationships, and well-being (Jiao et al., 2020; Larivière-Bastien et al., 2022; Liu & Doan, 2020; Sullivan, 2020). The pandemic-related adjustments that children faced may have lasting impact on children's behaviors, learning, health, and development (Benner & Mistry, 2020; Cantor et al., 2019). Thus, it is important to understand cascading impacts of the pandemic on children's development (Chiotos & Fitzgerald, 2023). At the time I studied elementary school-age children's reports of their pandemic-related experiences, I expected that children would understand what COVID-19 was and have independent emotions and perspectives on the pandemic. More specifically, I wanted to answer the following questions: (1) How did children report constructing their own understanding of the pandemic? (2a) Did children understand what COVID-19 was, and, if so, (2b) what changes in their everyday lives did children notice during the pandemic? (3) What were children's affective responses to the changes happening to and around them? (4) What values and perspectives developed for children during the pandemic? To learn more about children's understanding of COVID-19, I utilized 30 semi-structured, online interviews with children who were between 5 and 12 years old (Age: $M = 8.26$, $SD = 1.87$). The sample consisted of 56.7% girls and was 63.3% European American children. The children lived in the United States and were interviewed in 2022 when COVID-19 was still considered a state of emergency (Center for Disease Control, 2023). During this time, children had had over two years to adjust to pandemic life but were still experiencing public safety mandates. Interviews lasted around half an hour.

Research assistants transcribed the automatically generated interview transcripts verbatim; these were then checked to assure accuracy. Using Inductive Thematic Analysis, a team of five researchers derived insights from children's interviews (Braun & Clarke, 2006; Parker et al., 2012). Children offered well-organized perspectives on COVID-19. I identified six themes: Provision of Information: Who, How, and Why, Approaches and Reasoning, Perceptions of Pandemic-Related Risks and Safety, Outcomes of COVID-19, Affect, and Values. These themes encompass sixty-three subthemes. This study offers a look at the pandemic through the uniquely formed perspectives of children in early and middle childhood. By assessing what these children felt, knew, and how, I hope to create research that serves children as they are now *and* that will serve the people they will come to be (Jorgensen et al., 2022; Pereira et al., 2014).

Keywords: COVID-19, child development, children's voices, risk, resilience

© Copyright 2024 by Elizabeth N. Flatt

All Rights Reserved

A Really Big Change in the World: Understanding Children's Perspectives about COVID-19

by
Elizabeth Nichole Flatt

A dissertation submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Psychology

Raleigh, North Carolina
2024

APPROVED BY:

Amy Halberstadt, PhD
Committee Co-Chair

Lynne Baker-Ward, PhD
Committee Co-Chair

Jason Allaire, PhD

Stephen Wiley, PhD

DEDICATION

I dedicate this work to my family and to my Sebastian. I am only here because you have been here with me.

BIOGRAPHY

Elizabeth Flatt was born in Nashville, TN, where she attended University School of Nashville. Upon graduating in 2016, Elizabeth attended the College of William and Mary where she majored in psychology and music. Her undergraduate research included studies on young adults' autobiographical narratives, intergenerational storytelling, compensatory control, and childhood best friendship. She graduated with her B.S. cum laude with honors in psychology in 2020. Since 2020, Elizabeth has worked under the direction of Drs. Amy Halberstadt and Lynne Baker-Ward to explore parent-child socialization around identity, memory, and COVID-19. She has collaborated on research to understand respect cross-culturally. Her 2024 dissertation explores children's pandemic experiences from their own perspectives.

ACKNOWLEDGMENTS

To those who have made it possible to complete this project on children's understanding about COVID-19:

To all my collaborators throughout this research process, thank you for your support.

To the FABB and M&ND Lab research assistants over the past years three years, thank you for supporting this project in so many ways. It is because of your efforts that the data exist at all.

To Dr. Gwynn Morris, thank you for your early contributions to the development of this project's design.

To Dr. Kelly Lynn Mulvey, thank you for your suggestion to include scientific reasoning questions during seminar in my second year. It was a small moment, but these questions allowed children to demonstrate their tremendous knowledge of the world around them and allow the work to explore a developmental perspective that we otherwise would have missed.

To Erin Bernard, Summer Phommachieng, and Noelle Graybill, thank you for your collaboration as we analyzed children's interviews. This work would not have been half as rich without your generativity, creativity, and rigor.

To my Committee, thank you for your expertise and support. Your guidance shaped this project, improved my methodology, and opened me to new ways of interpreting the data I'd collected. I hope this paper reflects my respect and appreciation for you all.

To the children and families who participated, thank you for sharing what you know. I have so sincerely enjoyed getting to know you as I've learned from your responses, and I am excited to honor your participation with this paper.

To the Psychology Department, thank you for providing funds to Dr. Baker-Ward that allowed this research to move forward.

To those who have helped me navigate the program and who have impacted scholarship:

To the folks in Lifespan Development, thank you for serving as thought partners both during work hours and beyond them. Good science happens through excellent collaborations. I'm delighted to have you as colleagues, and my research is better because I've been able to collaborate with you.

To Drs. Allaire and Kotter-Gruehn, thank you for fostering my professional development as well as my academic development. I may not know yet exactly where I will go, but I know I've gained the skills I'll need to get there because I've worked with you both.

To Dr. Stephen Wiley, thank you for your contributions to my dissertation spanning media, equity informed work, qualitative methodology, and more. Thank you for your mentorship on mentorship through the GPMC. I'll use these skills for a lifetime.

To Esther Kim, Xi Liu, Julia Passini, Rebekah Knight, Jackie Cerda-Smith, Lyndsey Graham and my fellow graduate students, thank you for serving as peer mentors, collaborators, and friends. I'm lucky to have you all to lean on and guide my way.

To Caitlin Reynolds, my colleague and roommate extraordinaire over the past two years, thank you for everything, for even more than I could say.

And lastly, to Drs. Amy Halberstadt and Lynne Baker-Ward, thank you for your co-mentorship. I was advised before making my decision about graduate school that, if I decided to come to North Carolina State University, I would learn to be a better, more integrative, and more creative thinker and scientist because I worked with you. I have found that to be true. It is a gift beyond words, and I am forever grateful that you've given it to me.

TABLE OF CONTENTS

LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF APPENDICES	ix
INTRODUCTION	1
General Introduction	1
Children’s Knowledge of COVID-19	2
Bioecological Considerations	4
Risks to Children During COVID-19	6
Children’s Strengths and Coping During COVID-19	8
Sociocultural Considerations	13
THE CURRENT STUDY	14
METHODS	16
Participants	16
Procedure	18
Analytic Plan	24
RESULTS	26
Research Question 1	26
Research Question 2	31
Research Question 3	38
Research Question 4	44
DISCUSSION	53
Constructing Pandemic Understanding	55
COVID-19 Understanding	59
Affective Responses	59
Values	62
Indications for Changes in Cohort Perspectives	64
Practical Implications	66
Limitations and Future Directions	68
Conclusion	70
REFERENCES	72
TABLES	102
Table 1	102
FIGURES	27
Figure 1	27
Figure 2	30
Figure 3	32
Figure 4	37
Figure 5	39
Figure 6	45
APPENDICES	103
Appendix A	104
Appendix B	113

LIST OF TABLES

Table 1	Positionality of the Coding Team.....	102
---------	---------------------------------------	-----

LIST OF FIGURES

Figure 1	Provision of Information: Who, How, and Why	27
Figure 2	Approaches and Reasoning	30
Figure 3	Perceptions of Pandemic-Related Risks and Safety	32
Figure 4	Outcomes of COVID-19	37
Figure 5	Affect.....	39
Figure 6	Values.....	45

LIST OF APPENDICES

Appendix A: Child Interview Protocol	104
Appendix B: Child Interview Thematic Codebook	113

INTRODUCTION

General Introduction

Beginning in March 2020, families faced unprecedented challenges brought on by the COVID-19 pandemic (Jiao et al., 2020; Liu & Doan, 2020). Internationally represented through recent reviews of the literature, children as young as three years old noticed pandemic-related changes (Bray et al., 2021; Christidou et al., 2022; Graber et al., 2023; Sarkadi et al., 2023; Thompson et al., 2021), which required them to adjust to tremendous shifts in their everyday lives (e.g., education, peer relationships, play, well-being; Graber et al., 2023; Larivière-Bastien et al., 2022; Sullivan, 2020). Early in the pandemic, researchers captured children's perspectives of these challenges through art-based, experimental, focus group, interview, storytelling, and survey, methodologies (e.g., Graber et al., 2023; Jorgensen et al., 2022; Probst et al., 2023; Samji et al., 2022; Singh et al., 2020). From these foundational studies on children's earliest pandemic perspectives, researchers found that children experienced pandemic challenges in ways that were distinct from those of other cohorts. For example, Hotez et al. (2024) found that, when controlling for race, fourth graders were more likely to express optimism, happiness, self-esteem, and general health than their seventh-grade peers. Singh et al. (2020) highlighted through systematic review that youths' (0 to 25 years old) mental health outcomes depended in part on developmental age, with younger children (ages 3-6) showing increased clinginess, attention seeking, and fear and older children (ages 6-18) succumbing to inattention. Overall, young people's COVID-19 experiences could impact how they experience life moving forward (Benner & Mistry, 2020). Specifically, children's disrupted access to social supports (e.g., peer relationships) and positive experiences in schools, among other pandemic-related socioeconomic

and health shifts, could cascade into disruptions in their socio-emotional and cognitive development (Benner & Mistry, 2020; Fernandez Garcia et al., 2021; Hotez et al., 2024). I aim to contribute to the growing body of literature on children's COVID-19 experiences from their own perspectives (e.g., Senkal et al., 2023). In doing so, I hope to inform policy makers, and public health professionals who work with and on behalf of children (Senkal et al., 2023; Wagner et al., 2018).

Children's Cognitive Development in the Context of COVID-19

In early and middle childhood (ages 5-12), children experience exponential cognitive development (for review, see Fernandez Garcia et al., 2021), which in turn impacts how they understand and respond to the world around them. Children in this age range are undergoing structural changes in their white and gray matter across multiple brain regions, with individuals tending to experience the most brain development at eleven or twelve years old (Rapoport et al., 1999). This, in turn, might make school-aged children particularly susceptible to disruptions in their everyday lives (Singh et al., 2020). Their physical development correlates with gains in both hot (e.g., emotion regulation, decision-making in times of uncertainty) and cold cognition (e.g., attention, working memory, cognitive flexibility), both of which are essential for assessing real-world events (Fernandez Garcia et al., 2021). In order to understand an event, a child needs both underlying knowledge of the event as well as a subjective record of the said event (Baker-Ward et al., 2009; Bruner, 1957). Although preschool-aged children have the cognitive structures in place to remember events, event processing becomes more nuanced as children get older (Habermas et al., 2010). To that end, children with more developed executive functions are better able to contend with novel, unanticipated challenges than children who with less developed

executive functions (Diamond, 2013). Moreover, Esposito and Bauer (2018, 2019) found through experimental designs that scientific knowledge integration between information sources tends to develop for children between the ages of six and ten years old. Together, this evidence suggesting that older school-aged children may have an advantage over their younger peers in synthesizing the immense amount of information for myriad sources that children were expected to process throughout the pandemic.

Within the context of the pandemic, children were knowledgeable about COVID-19 and how to keep themselves safe (Sarkadi et al., 2023). Within the first year of the pandemic, school-aged children (ages 6-16) tended to have a firm understanding of COVID-19 safety measures (Shaikh & Likhite, 2020). This knowledge may have resulted from parent-child conversations and public messaging around COVID-19. Within the United States (US), parents were encouraged by the government (e.g., Center for Disease Control [CDC]) and global health organizations (e.g., World Health Organization [WHO]) to have conversations with their children in a variety of ways around numerous topics (e.g., personal hygiene, social hygiene, social distancing, emotions, physical activity, technology use, adaptation of routine, talking, mindfulness strategies, creative outlet; Brooks et al., 2020; Tambling et al., 2020). How children characterized their understanding of the virus, its causes, and its spread shifted with development (Bonoti et al., 2021; Idoiaga et al., 2020). For example, shown through their own drawings and verbal accounts, around age seven, children began to move from describing viruses in mythical terms to relying more heavily on their biological knowledge (Bonoti et al., 2022). It appears that by age ten, children could describe what COVID-19 was, its symptoms, and its spread (Bonoti et al., 2022; Idoiaga et al., 2020). Based children's free associations through a protocol that was

administered by parents, children tended to describe the virus using personification and metaphors, noting that COVID-19 was an enemy whom doctors fought (Idoiaga et al., 2020).

Children recognized the social and emotional implications of the pandemic, too. Idoiaga et al. (2020) found through children's free associations with the word "coronavirus," that children (ages 3-10) felt conflicting positive and negative emotions about the change in their situations. They also noted that children expressed concern for keeping older family members safe and guilt at the thought of not being able to provide that safety. Bonoti et al. (2022) confirmed through interviews and drawing that children (ages 4-10) considered the social, cultural, and emotional impacts of COVID-19 in addition to their scientific understanding when conceptualizing the virus. These findings together highlight the complex factors children needed to contend with when processing the pandemic.

Bioecological Considerations

Children's experiences, both normative and non-normative, cascade into changes in their developmental trajectories (Almeida & Wong, 2009; Masten & Cincchetti, 2010; Masten & Narayan, 2012). Developmental cascades are the linkages between age-salient tasks in one stage of development and later behaviors (Scheier & Shigeto, 2022) and between developmental shifts across system levels (Bronfenbrenner, 1977; Masten & Cincchetti, 2010). These changes can be positive or negative (Almeida & Wong, 2009; Baltes et al., 2006). For example, everyday performance in school can reinforce children's beliefs about their own abilities (Cole, 1991; Karabacak-Çelik & Aşantuğrul, 2024), which can then impact their emotional outcomes (Dou et al., 2016; Mehrizi et al., 2023). Moreover, the impact of children's experiences can cascade in myriad ways across time (e.g., enduring shifts in identity), domains (e.g., from school to home),

levels (e.g., from children to their caregivers), and generations (e.g., from parents to children via genetics and socialization), making it especially important to understand what children are experiencing and how they are interpreting those events (Masten & Narayan, 2012).

Experiencing large-scale, sociohistorical events shapes children's developmental trajectories (Benner & Mistry, 2020; Bronfenbrenner, 1977; Elder, 1998). Traumatic historical events (i.e., COVID-19) in particular often significantly alter development (Masten & Narayan, 2012). For example, during The Great Recession in the United States children who were enrolled in elementary school experienced worse academic outcomes than people in other age groups (Shores & Steinberg, 2019). Similarly, epidemics (e.g., H1N1, AIDS, Ebola) resulted in increased rates of anxiety and depression, which compounded into developmental delays and health problems because they imposed social restrictions, shutdowns, and school closures (Araujo et al., 2021; Braunack-Mayer et al., 2013). Children need positive social relationships and educational experiences to promote their social and cognitive development (Hotez et al., 2024). Moreover, the compounded impact of adverse events in childhood can persist into adulthood (for review, see Araujo et al., 2021). Children can rapidly accumulate positive and negative experiences because of the increased exposure to potential stressors (Sprang & Silman, 2013).

The cascades children experience from large-scale, sociohistorical events are related to where they were in development when the event occurs (Mistry et al., 2022; Shores & Steinberg, 2019). Children (ages 0-8) were uniquely sensitive to the changes brought on by COVID-19 because they were simultaneously experiencing age-related shifts in cognitive and social development (e.g., cognitive control, academic achievement, empathy, perspective-taking, and emotional control; Benner & Mistry, 2020; Cantor et al., 2019; Rogers et al., 2012; Schonert-

Reichl et al., 2015; Varga, 2019). As with development historically, children in the pandemic were actively exploring who they are and with whom, particularly through school (Duong & Bradshaw, 2017; Kragh-Muller & Gloeckler, 2010; Verhoeven et al., 2019). Stay-at-home orders during the pandemic disrupted educational settings (Benner & Mistry, 2020). Given their importance for development, substantial disruption to children's social and educational lives, likely changed children's perspectives on themselves, their social relationships, and their contexts (Kragh-Muller & Gloeckler, 2010; Sabol & Pianta, 2012). Many children use school as a place to develop secure relationships (e.g., friendships), which relate to improved coping (Kragh-Muller & Gloeckler, 2010) and memory development (Cook, 2023). This is in contrast to adults who may have constructed strongly rooted identities (Fivush, 2011) and well-established social relationships (Clark et al., 2015), which could help buffer against developmental disruptions. So, what children will carry forth from the pandemic may be unlike the outcomes of other age groups (Benner & Mistry, 2020; Jiao et al., 2020; Ramadhan et al., 2020).

Risks to Children During COVID-19

Because the pandemic spanned multiple years, individuals of all ages across the globe were likely exposed to a high dosage of stressors (i.e., traumatic exposure), which could increase the likelihood of emotional and behavioral maladaptation (Masten & Narayan, 2012; for review, see Samji et al., 2022). For children (broadly defined by the authors as 0 to 25 years old), the pandemic harmed mental health, physical health, development, and academic achievement (Goldfeld et al., 2022); however, such a large range for childhood leaves room for additional investigation of the pandemic's impact on children in more precise age groups. Emotionally, school-age children reported nervousness, loneliness, guilt, boredom, fear, and sadness (Idoiaga

et al., 2020). Children's fear and sadness were often directed at the thought of contracting COVID-19 (Gallego et al., 2023). Araujo and colleagues (2021) found that children's loneliness and boredom tended to arise as a result of physical distancing, school closures, and stay-at-home orders.

As with other epidemics and pandemics, during COVID-19, both adults' and children's rates of depression, PTSD, psychological distress, and stress rose significantly (Ozamiz-Etxebarria et al., 2020; Šrol et al., 2021; Xiong et al., 2020). People in quarantine during COVID-19 experienced increased risks of developing depression depending on the severity of the lock-down regulations imposed, social class, and economic status (Karakatsoulis et al., 2022; N'dure Baboudottir et al., 2023; Taylor et al., 2024). Across populations, the risk of developing anxiety rose as well (for review, see Saeed et al., 2022). These risks related to maladaptive behaviors for children, with children showing increased clinginess, distraction, irritability, and either fear of asking questions or persistent inquisitiveness, dependent on age (Jiao et al., 2020; Ramadhan et al., 2020). In addition, parents reported over two timepoints that children showed difficulties with attention, hyperactivity, and impulsivity following lockdowns (Gimenez-Dasi et al., 2020).

Interestingly, many children, typically beginning around age five, cited their concern for the health of others, particularly older family and community members as a point of anxiety and guilt (Cauberghe et al., 2021; Idoiaga et al., 2020; Strommer et al., 2022; Thompson et al., 2021). Even young children (ages 4-6) recognized that COVID-19 was an enemy, threatening health globally (Sarkadi et al., 2023). As such, children widely endorsed safety measures, particularly when public health messaging presented other-focused rationale (Probst et al., 2023; Sarkadi et al., 2023). They wanted to ensure they were doing what they could to preserve the health of

others over their own health (Bray et al., 2021; Kelly & Diskin-Holdaway, 2022). Children generally responded positively to opportunities to keep others safe, noting this as their social responsibility (Thompson et al., 2021). Probst and colleagues (2022) found through experimental design that American children (age 5–10) demonstrated sensitivity to other’s intentions and impact when assessing others’ decision on whether to heed safety recommendations. Both Probst and colleagues (2022) and Strommer and colleagues (2022) found through quantitative and qualitative means that some children viewed non-compliance with safety precautions as selfish. Attending to children’s moral decision-making, which in some instances could be used prosocially or in potentially anxiety-inducing situations (e.g., supporting sibling safety) may offer a look into children’s dialectic experiences during COVID-19.

Children’s Strengths and Coping During COVID-19

Despite significant risks to children’s well-being posed by the pandemic resilience, which is the ability to recover, maintain, or augment positive outcomes despite threats to development, may be an inherent protective factor for children (Horn et al., 2016; Masten, 2001). That is to say, just because risks can compound into long-term maladaptation does not mean they always do. Risk is probabilistic (Masten, 2013), so some negative cascades from COVID-19 could be mitigated or avoided. To understand possible recovery trajectories, I looked to literature on past disasters. In the case of some acute, time-limited disasters (e.g., terrorist attacks of 9/11 in the United States), children and adolescents showed signs of recovery within a year of the event (Eisenberg & Silver, 2011). This was particularly true when they were indirectly exposed to the attack (Eisenberg & Silver, 2011; Gershoff et al., 2010). For high-dose, extended events like COVID-19, recovery may take more time, but is still possible (Green et al., 1994; Masten &

Narayan, 2012). Resilience can manifest in multiple ways across levels, domains, and generations; resilience occurs as a result of both person-level factors and external supports (e.g., family, resources; Masten et al., 2021). Therefore, it is necessary to understand children's reactions to COVID-19 and the supports they found effective in interpreting and processing the global changes around them.

During the pandemic, children responded to and coped with COVID-19 in a variety of ways. For example, children experienced not only negative emotions but appreciation, gratitude, tolerance, and compassion (Evans et al., 2020; Stanicke et al., 2023). Inductive thematic analyses of children's (ages 5-17) coping note that individuals managed their mixed reactions to the pandemic through hobbies, nature, emotional expression, social support, and/or external resources (e.g., Gallego et al., 2023; Larivière-Bastien et al., 2022; Montreuil et al., 2022). An exploratory factor analysis of adolescents' (ages 9-13) found that some forms of support-seeking (e.g., social media use) had limited returns based on how they were used (i.e., despite children's efforts to create comforting spaces online, there may be more effective coping strategies; Cauberghe et al., 2021). Other coping strategies such as narratives and play were more successful.

Looking beyond the pandemic, post-pandemic recovery will likely be dynamic and could still redirect children from maladaptation to resiliency (Shoychet et al., 2023). Because the cascading impacts of COVID-19 (e.g., externalizing behaviors or resiliency) could persist for years to come, a narrative synthesis of forty-seven longitudinal studies conducted by Shoychet et al. (2023) reveals that children will need access to effective coping strategies and interpersonal support. For these supports to meet children where they are, it is important to understand not only how children perceived COVID-19, which could have been both an extremely stressful

event and an opportunity for resilience, but also what coping mechanisms children have used thus far that families could continue to implement as the pandemic wanes. Two such strategies, which were widely used pre-pandemic are storytelling (Ball, 1998) and play (Capurso & Ragni, 2016).

Coping through narratives. Storytelling can help children effectively navigate challenging life circumstances (Pascal & Bertram, 2021). The ability to engage in storytelling develops early in that children can coherently narrate chronologically organized events that include dialogue and affective information by the time they are five years old (Habermas et al., 2010; Reese et al., 2011). Children's episodic recall can be especially accurate over time, if what they remember makes sense to them, is a salient action, or is an emotional, personally meaningful event (Ceci & Bruck, 1993; Flavell, 1985; Tustin & Hayne, 2016). Pascal and Bertram (2021) found that within the context of the pandemic, storytelling allowed young children to understand themselves and others, express their emotions, and affirm connections (Pascal & Bertram, 2021). Moreover, storytelling can serve as a vehicle for approach coping (e.g., reappraising a situation, problem solving). Approach coping, in turn, related to lessened emotional problems throughout the pandemic (Cauberghe et al., 2022; Shi & Wang, 2021). Parents can assist children's storytelling through reminiscing. Parental reminiscing interventions show benefits for children's identity development and overall well-being in both childhood and adulthood (Leyva et al., 2020; Marshall & Reese, 2022; Mitchell & Reese, 2022).

The meaning children infuse in their experiences impacts their individual (i.e., within-cohort), long-term outcomes from COVID-19 (Ball, 1998). Children recall events to make sense of their lived experiences (Bluck et al., 2005; Fivush, 2011; McAdams & McLean, 2013). They

do so in developmentally distinct ways and not like tiny versions of adults (Fivush, 1998). That is to say, what children chose to include in their reflections represents what they value and may be different than what adults think to include (Chesson et al., 1997). For example, whereas a parent may choose to remember that COVID-19, although overall not a positive time, allowed their family to avoid a commute and spend more quality time with one another; a child might highlight that they missed their friends but got to play in the yard more often than before. In both instances, the framing of the event becomes positive, but the underlying value differs. It is worth noting that the negative emotions related to COVID-19 rarely existed in isolation (Stanicke et al., 2023). Rather, when remembering adverse events, people report dialectic interactions between positive and negative feelings (Flatt et al., 2023). Talking through challenging experiences generally can promote positive psychosocial adjustment (Abel & Lattal, 2001; Freeman et al., 2023). The resulting shifts in worldview may inform their identity development, depending on the meaning they infuse into their pandemic experiences (Benner & Mistry, 2020; Larsen et al., 2023; Yin et al., 2022). When children use those conversations to instill events with meaning *and* frame them positively, they can further bolster their sense of self and improve well-being (McLean et al., 2020; Pals & McAdams, 2004; Pasupathi et al., 2007; Ryff & Singer, 2008).

Coping through play. Play endured as another asset to adaptability, positivity, and confidence across age groups (Graber et al., 2024; Manzano-Leon et al., 2021). In some cases, communities rallied cross-generationally to increase opportunities for children's play despite lockdown (e.g., the teddy bear game for families on walks in Finland, student-teacher educational games), to promote child wellness despite the need for physical distancing (Heljakka, 2021; Piangiamore & Maramai, 2022). For example, through the teddy bear game, in

Finland families inside created a search game for families while they were out on family walks. The game was a point of community building and resilience for both adults and children who participated (Heljakka, 2021). For children in school, gamification, wherein educational tasks during the pandemic were transformed into opportunities for play through games, showed promising results for reducing student and teacher difficulties and increasing adaptability and resilience (Piangiamore & Maramai, 2022). Play interventions, then, may remain as a creative, customizable tool for meeting individual and community needs at multiple points in development across multiple roles.

Despite the enormous threats to children's health and well-being, many adults and children who experienced COVID-19 developed new positive perspectives while managing pandemic-related stressors. For adults who could stay home, positive changes tended to include increased family time, improved self-care, and increased connection with others (Cornell et al., 2022). Parents reported that their children had stronger parent-child relationships, time to explore new hobbies (e.g., music, time in nature), and developed positive emotions (Evans et al., 2020). For both adults and children, shifts included the development of new values (e.g., autonomy), shifts in their priorities (e.g., family and leisure), and the development of new skills (e.g., riding a bike; Pascal & Bertram, 2021; Thompson et al., 2021). Children themselves echoed feeling happy with family, the importance of peer relationships, and liking the freedom to explore new interests (Idoiaga et al., 2020; Larivière-Bastien et al., 2022). Children uniquely expressed feeling calm, safe at home, and the joys and challenges of online learning (Dvorsky et al., 2020; Evans et al., 2020; Gallego et al., 2023).

Sociocultural Considerations

Despite some positive outcomes, families did experience a range of both positive and negative outcomes depending on socioeconomic status and other societal structures (Khubchandani et al., 2021). This study explores the pandemic experiences of 30 middle to upper-middle class children within the United States. I recognize that communities within the United States experienced the pandemic in numerous ways (Khubchandani et al., 2021), and most notably, by ethnicity and wealth status (N'dure Baboudottir et al., 2023; Vuorenlinna et al., 2023). Some of the risks to and strengths of the children interviewed for this research may be different than the risks to and strengths developed by children contending with the multiple pandemics of COVID-19 and racism: children's minoritized status intersects with how they experienced COVID-19 (Brodie et al., 2021; Jones, 2021). For example, many Black women in the United States faced additional challenges during the pandemic because they were tasked with creating safety for themselves and their families while also combating dual discrimination based on intersectional identities (i.e., Black womanhood) and dual pandemics (i.e., racism and COVID-19; Geyton et al., 2023). Alternatively, COVID-19 further illuminated the educational inequities in the United States, such as inequitable access to special education, disproportionate representation in highly capable learning, and disproportionate punitive discipline for communities of color (Diamond, 2018; Jones, 2021).

Low socioeconomic status can threaten well-being, especially when considered concurrently with other crises (Vuorenlinna et al., 2023). Lower socioeconomic status was a risk factor for increases in anxiety during the pandemic (Saeed et al., 2022). School closures in particular impacted students disproportionately across the globe, depending on pre-existing access to education. In some cases, children's family wealth status also disproportionately

interrupted their education beyond the already broad disruptions of online school (N'dure Baboudottir et al., 2023). Some adolescents whose access to education was taken from them when schools closed expressed feelings of being left behind or like their opportunity for an education was slipping away (N'dure Baboudottir et al., 2023).

When combined, minoritized status and socioeconomic status can intersect to exacerbate already stressful situations. In some cases, the perspectives of those most impacted by public policies are the ones least consulted in their construction (Omaleki et al., 2024). For example, Taylor and colleagues (2024) note that Latine immigrant youth living in the midwestern United States experienced compounded stress from financial burden, illness, *and* challenges accessing online education. These stressors were, in turn, related directly to their mental health concerns, and indirectly to their engagement, perseverance, optimism, connectedness, and happiness. Beyond this, some health and mental health services may be more challenging to access for youth who are multiply minoritized (Ros et al., 2023). As such, it is important to look globally when engineering solutions to foster recovery and resilience beyond the immediate impacts of COVID-19. Although participants' responses are embedded within life experiences of primarily middle and upper-middle class European American children during the pandemic, I hope that my work will be utilized alongside the international body of literature on children's pandemic-related experiences, which describes some cohering, global perspectives on the pandemic across multiple years.

The Current Study

As part of a larger investigation on parent-child socialization which focused on COVID-19 safety at a time when COVID-19 was still influencing daily life (Summer to Fall 2022),

school-age children participated in semi-structured interviews regarding their safety knowledge, anxiety, and perspectives about the pandemic. We targeted children between the ages of 5 and 12 years old, as this period has the potential to reveal children's thinking before, during, and following their development of scientific knowledge integration, risk comprehension, and moral reasoning. In this way, we aimed to assess the developmental differences in these skills (Esposito & Bauer, 2018, 2019; Rizzo & Killen, 2016).

From these interviews, I observed that children's responses offered a substantial opportunity to learn about their pandemic perspectives, prompting a deep exploration of children's pandemic understanding via qualitative analysis. I expected that children would have an understanding of what COVID-19 was and have independent emotions and perspectives on the pandemic. I wanted to answer the following questions: (1) how did children report constructing their understanding of the pandemic? (2a) did children understand what COVID-19 was, and, if so, (2b) what changes in their everyday lives did children notice during the pandemic? (3) what were children's affective responses to the changes happening to and around them? (4) what values and perspectives developed for children during the pandemic?

To answer my questions, I conducted an inductive thematic analysis on the 30 child interviews. Following my analyses, I situated my sample's perspectives within the context of global pandemic responses (for reviews, see Araujo et al., 2021; Samji et al., 2022; Shoychet et al., 2023; Thompson et al., 2021).

It is worth noting that within the research process, the first step in addressing any broad challenge is to identify what that challenge is. Therefore, the value in my work lies first in defining the challenges and benefits of the pandemic from children's perspectives. In doing so, I hope to contribute to psychologists' understanding of the challenges children faced during the

pandemic, elucidated children's perspectives on those challenges, and begun to propose ways to support children as the pandemic wanes. Because children might experience developmental cascades from COVID-19 that could permeate into adulthood, educators, policy makers, and researchers should be informed on how children perceived COVID-19 so that they can identify and meet the unique needs of children in this cohort across real-world areas of impact (Benner & Mistry, 2020; Thompson et al., 2021). Thus, in a crisis as universally impactful as COVID-19, it's critical that we include the perspectives of children so we can better understand how they experienced these developmentally distinct challenges (Kyeremateng et al., 2022; Pascal & Bertram, 2021). Children's responses allowed for a deeper understanding of their reasoning, perspectives, values, and emotions, thereby addressing the gap in knowledge of children's pandemic experiences beyond the first years of the pandemic, as discussed by Thompson and colleagues (2021).

METHOD

Participants

Interviewees were 30 children in kindergarten through fifth grade who came primarily from two major cities that include both urban and suburban areas in the southeastern United States (Raleigh and Nashville). Children's mean age was 8.26 with a standard deviation of 1.87 years. Girls comprised 56.7% of the sample. Children's families almost entirely included two parents (96%), at least one parent had obtained a graduate degree in 60% of reporting households, and total annual household income was at or above \$100,000 for 66.7% of the families. About 17% ($N = 5$) of parents elected not to report family demographics; however,

interviewers verified that children were within the target age range prior to beginning the interviews. The ethnic/racial composition of the sample was 63.3% European American, 10% Asian American, 6.7% white Hispanic American., and 3.3% African American. Parents who had multiple children within the target age-range were permitted to fill out one survey per child on the basis that dyadic interactions vary widely even within a single family (Plomin & Daniels, 2011); thus, four sibling sets were included ($N = 10$ children).

To further describe the sample in terms of the stress experienced by the pandemic, we asked parents to fill out the Pandemic Stress Questionnaire (Kujawa et al., 2020). The pandemic was disruptive for families in the study. Reporting families experienced between seven and fifteen ($M_{Total\ Stressors\ Experienced} = 10.52$, $SD = 2.66$) of twenty-eight possible pandemic-related stressors. Notably, some of the frequently and infrequently occurring stressors in this sample were personal illness ($N = 22$), disruptions of planned events ($N = 20$), death of a loved one ($N = 5$), parental job loss ($N = 4$), financial strain ($N = 1$), and experiences with racism ($N = 1$).

Recruitment strategies included online advertising (e.g., social media posting, joining parenting groups), snowball recruitment, community postings (e.g., YMCA, online parent groups), and in-person recruitment events at a local children's science museum. To recruit online, three research assistants explored and joined parenting groups on social media. Once they had joined the groups, they shared the flyer and a brief post about the study. To facilitate snowball recruitment, research assistants were requested to ask family or friends if they knew of families who may be interested in participating; however, to maintain a degree of separation, no person associated with the study was permitted to make any posts on their personal social media page or to recruit known families. To post on public boards, another research assistant emailed and visited local community centers and requested to post flyers. In locations that consented,

flyers were hung on community boards. Finally, I partnered with Marbles Kids' Museum, which encourages children to engage in scientific learning through imagination, discovery, and play, to recruit families who may already have had an interest in science and health education. On five occasions, a 3-person team set up a table in the lobby of the museum. At the table, two research assistants led children in one of two crafts about handwashing. While the children completed the activity the third research assistant discussed the study with the parent(s). Parents were encouraged to take a flyer and/or scan the QR code if they were interested in participating in the study.

Compensation for participation was in the form of a chance to win one of six \$50 Amazon gift cards. Upon completion of the study, I used a random number generator in order to select which participants would receive compensation. Families were notified via email whether or not they were selected.

Procedure

The current study was approved by the Institutional Review Board at North Carolina State University (IRB Protocol #24079). Child participants were interviewed online via Zoom to elicit their thoughts and reactions about the pandemic and a parent provided demographic information in an online survey. As part of a larger study, family recruitment occurred between Summer 2022 and Winter 2023. Child-reported data were obtained July 19, 2022 to November 17, 2022 during the period of time when a Public Health Emergency was in place in the United States (March 13, 2020 – May 11, 2023; Center for Disease Control, 2023).

Because of rapid changes in the public mandates related to COVID-19 at this time, and in an effort to maintain homogeneity in children's distance from the initial lockdown, I stopped

child recruitment before the conclusion of the larger study and continued with only parent surveys. When making this decision, I assessed what the likely memory capacities of my youngest participants were. Young children especially have differences in delayed recall with increasing length of time since an event occurred, especially if they did not deem that event directly relevant (Ceci & Bruck, 1993). The youngest children in the study recruited in 2022 would have been 3 years old at the onset of the pandemic. Recruiting beyond 2022 would have meant some children would have been as young as 2 years old. Younger children are likely to remember fewer things with less detail than their older peers after a delay (Peterson et al., 2014), which led me to expect that those children would be less likely to recall safety measures not because of a past lack of knowledge but because too much time had passed, and safety measures were increasingly less relevant to them. Later interviews may not have reliably answered my research questions. The 30 interviews I did collect have instead allowed for a rich exploration of research questions beyond the scope and intention of the initial study design.

Materials approved by the IRB for participant recruitment included a flyer, which could be posted online, on public boards, or handed directly to parents. The flyer included a QR code that linked to the interview calendar. Parents and children agreed to participate could sign up for an appointment slot, which then, in turn, provided the link to the study survey. For the survey, parents were directed to an online informed consent document. If signed, parents then completed a Qualtrics questionnaire which took about 30 minutes to complete. Within the survey, parents were asked to report demographic information, including their location, age, gender, parent marital status, family income, ethnicity, and pandemic-related stressful experiences. Parents who did not wish to complete the survey had the opportunity to complete the consent documents so that the child interview could proceed.

Pandemic Stress Questionnaire. The Pandemic Stress Questionnaire (Kujawa et. al, 2020) was designed to gather information regarding a families' experiences with stressful events during the COVID-19 pandemic. The original survey presented 29 statements describing difficulties stemming from the pandemic (e.g., "My household had difficulty obtaining basic supplies because of the coronavirus pandemic [e.g., food, medicine, and toilet paper]") and assessed both frequency and emotional impact of said pandemic-related events. We made minor adjustments to the survey to elicit the parents' report of the child's experience during the pandemic (e.g., "I had to move unexpectedly due to the coronavirus pandemic" became "My household had to move unexpectedly due to the coronavirus pandemic"). We removed one item due to population relevance ("I had problems with my visa or the Student and Exchange Visitor Information System because of the coronavirus pandemic [e.g., unable to renew]"). Within the scope of this paper, parent-reported frequency data ($N = 25$) on children's pandemic-related stressors were used to more fully understand the impact of the pandemic in this sample's everyday lives.

Child Interview. The semi-structured interviews were initially designed to assess children's safety measure knowledge and anxiety. To support the main research question, I included some questions about risk, virology, and the morality of illness. In doing so, I hoped to capture children's perspectives on COVID-19 and potential developmental differences in children's reasoning. The child interview protocol (Appendix A) was based on the instrument used extensively in previous research examining children's knowledge and memory for medical experiences (for review, see Baker-Ward et al., 2021). Adaptations were made by a team of six researchers (two senior researchers, two graduate students, and two undergraduate research assistants), with the goal of crafting non-leading questions that allowed children with disparate

beliefs to share their perspectives without fear of judgment. To do so, the interviews began with a confirmation that there would be “no right or wrong answers” and that the interviewer was only interested in knowing “what kids your age know.” Additionally, although interviewers offered encouragement throughout the interview process, they were carefully trained not to make statements that might affirm that *what* children were saying was good, but to instead affirm *that* children’s participation was good (e.g., “Thank you so much for helping” or “I appreciate hearing what you know”).

In total, nine interviewers participated in extensive trainings, including a debrief on the interview protocol and its rationale and a mock interview, in order to serve as Interviewer 2. Per the interview protocol (Appendix A), interviewers were trained on effective, unbiased child communication and were instructed to follow a standard script but were also encouraged to explore with open-ended questions and probes such as: “You mentioned [safety practice]. Can you tell me more about that?” and, “How/when/why do you [safety practice]?”. Once a researcher had conducted enough interviews in the Interviewer 2 role, I supervised them in the Interviewer 1 role. Following successful completion of a supervised interview, they were then permitted to take over Interviewer 1 responsibilities independent of my supervision. In total, 1 senior researcher, 2 graduate student researchers, and 1 undergraduate research assistant ($N = 4$) were trained to serve as Interviewer 1.

During interviews, interviewers led with an open-ended question and then followed up with non-leading prompts. Each time children were asked an open-ended question, they were provided with two additional opportunities to offer more information (e.g., “What do you do to keep others safe?” “Can you think of any more things?” “Can you think of one more thing?”). Once children provided unprompted knowledge (e.g., in response to the question, “What did you

do to stay safe?” Answer, “I wore my mask”), interviews followed up for more detailed information (e.g., Question, “You told me you wore your mask. Can you tell me more about that?”). If the child did begin to elaborate, the interviewer could provide neutral encouragement and once again prompt for more information (e.g., “Is there anything else you can tell me about wearing a mask?”). In the event that children did not provide a detailed answer to the open-ended follow-up question, interviewers were trained to ask “wh” questions (e.g., “Can you tell me when you wear a mask?”). If a child could not answer a question, they were instructed to say, “I don’t know.”

When asking about two concepts (COVID-19 and risk), children were asked if they knew what the terms meant and were offered an opportunity to explain their understanding to the interviewers. The definitions interviewers provided were intentionally simple and neutral (e.g., “[COVID is] what’s been making people sick” and “[Risk is] how likely something is to happen.”). If the child was not aware of the term, the interviewer would establish shared language before asking additional questions (e.g., Question, “First, can you tell me what COVID-19 is?” [If no:], “I’m talking about what’s been making people sick. Can you tell me about that?”). If children could provide some description of the key term, the interviewer would affirm their understanding, and the interview could proceed (e.g., Question, “Do you know what risk means?” Answer, “It’s like if you jump off the swings you could get hurt or you could not,” Then, “Right, thank you for that example, so risk means how likely something is to happen...”). Through this generative interview process, interviewers drew out children’s reports of their knowledge and provided space for children to elaborate on features of the pandemic that they deemed most relevant.

For each interview, two interviewers joined the Zoom call. Interviewer 1 conducted the interaction with the child. Interviewer 2 recorded children's spoken survey responses, recorded children's spontaneous generated safety knowledge, and communicated children's safety knowledge in real-time to Interviewer 1 via private message. Interviewer 2 also made notes on the child's compliance throughout the interview. In total, nine interviewers participated in extensive trainings, including a debrief on the interview protocol and its rationale and a mock interview, in order to serve as Interviewer 2. Per the interview protocol, interviewers were trained on effective, unbiased child communication and were instructed to follow a standard script but were also encouraged to explore with open-ended questions and probes such as: "You mentioned [safety practice]. Can you tell me more about that?" and, "How/when/why do you [safety practice]?". Once a researcher had conducted enough interviews in the Interviewer 2 role, I supervised them in the Interviewer 1 role. Following successful completion of a supervised interview, they were then permitted to take over Interviewer 1 responsibilities independent of my supervision. In total, 1 senior researcher, 2 graduate student researchers, and 1 undergraduate research assistant ($N = 4$) were trained to serve as Interviewer 1.

On the day of the interview, following parental consent, the interviewer established rapport with the child, explained the purpose of the study, and obtained the child's assent. If a child did not assent, which occurred once, the interview concluded. If the child did assent, the interview proceeded as detailed. All children were interviewed via Zoom, with Interviewer 1 leading and guiding the interview, and Interviewer 2 to take notes. Each session was audio recorded and lasted between 15:55-46:45 minutes.

Transcribing. Interview sessions were first downloaded as Zoom transcripts and a trained research assistant anonymized them and listened to correct errors in the auto-generated transcript. Transcripts were then checked for accuracy by two additional research assistants. Finally, the transcripts were reviewed by the first author for accuracy. Please note that all the children's names are pseudonyms.

Limitation of My Data Collection. At the outset, I want to note that this work can only address the direct experiences of the 30 children who were interviewed and that Zoom interviews may lack some of the nuanced sensory cues available through in-person conversations. Nevertheless, this study has the potential to add to the growing body of literature on children's pandemic experiences and documents a timeframe in the pandemic that has not been widely considered up to this point (for review, see Thompson et al., 2021).

Analytic Plan

Inductive Thematic Analysis. To learn more about children's perceptions of pandemic experiences, I utilized qualitative, inductive thematic analysis. This strategy involves using the following steps proposed by Braun and Clarke (2012): 1) becoming familiar with my data, 2) generating themes that described what children were saying, 3) identifying the specific evidence which supported those themes, 4) reviewing these themes and the evidence iteratively, and 5) naming and refining the themes until the team was satisfied with the specificity and breadth of the codes (Braun & Clarke, 2006; Parker et al., 2012). This analytical strategy avoids imposing a research agenda on children's responses (Halberstadt et al., 2016), instead allowing the data to inform the direction of the research; however, I acknowledge that the meaning I found in

children's interviews comes as a result of the interview design, the relationship between the interviewer and interviewee during the interview, the analyses, and my interpretation of the themes in the context of prior literature (Glaser & Strauss, 1967). Nevertheless, my goal was to generate the latent themes emerging from the transcripts by listening to children's stories and insights (Wiltshire & Ronkainen, 2021).

I began by examining the transcripts closely to become familiar with the data, as did the additional team members who included one senior research scientist and three research assistants (i.e., undergraduate or recently graduated students). This team allowed for diversity across age and backgrounds (e.g., educational, racial, experiential; see Table 1). I requested that all team members make initial attempts to categorize excerpts they identified, but to also include all interesting excerpts even when they could not be categorized, and these were collected in a "what's this?" code category to be discussed during coding meetings. We held 17 meetings over seven weeks to become familiar with the data, generate themes, identify prototypical evidence and atypical evidence, and review and refine the themes.

I note the iterative expanding-contracting process of qualitative work (Braun & Clarke, 2019), beginning with many themes, and then integrating and differentiating themes while continually examining the transcript evidence; this occasionally led to identifying new themes and subthemes or dropping themes, and further refining the thematic structure, following procedures specified by Halberstadt et al. (2016), Hughes et al. (2023), and Parker et al. (2012). The coding team utilized cross-researcher comparisons to ensure persuasive evidence, further refinement or creation of new themes and evidence until saturation was achieved (few or no refinements or evidence). Once we ceased to identify new themes in meetings, all three research assistants coded cleaned versions of the interview transcripts based on the coding manual. The

coding team was encouraged to tag multiple themes within an excerpt, if they applied. Finally, codes were verified via consensus by the senior researcher and myself. At the conclusion of this process, the team had achieved a coding manual that reflected the themes, which I then used to build the coding system, using Dedoose Version 9.0.17 (2021).

Through the writing process, I continued to embrace Braun and Clarke's (2019) call to dwell in the uncertainty and constant evolution of qualitative results. Although all code definitions remain the same, as we began preparing to integrate the findings with extant literature, we adapted the organization of the coding manual to better reflect how the themes fit within the body of literature on children's perspectives on COVID-19 and to interpret and group subthemes of each code (Appendix B).

RESULTS

Research Question 1: How did children report constructing their understanding of the pandemic?

The children's conversations revealed a variety of components around their reasoning processes. I grouped their sources of information and how those sources seemed to function to meet children's needs into *Provisions of Information: Who, How, and Why* (Figure 1). I noticed that children used different reasoning styles when sharing their knowledge or unpacking complex topics (e.g., questions about risk, moral reasoning), which I grouped as *Reasoning Practices* (Figure 2). At least occasionally the children in the sample encountered differences in the decisions and beliefs of others and their negotiations around that type of information revealed how those differences required them to derive their own unique perspective. Although these

examples were less frequent, we include them because they were so instructive of the children's development of their own unique perspectives.

Provision of Information: Who, How, and Why

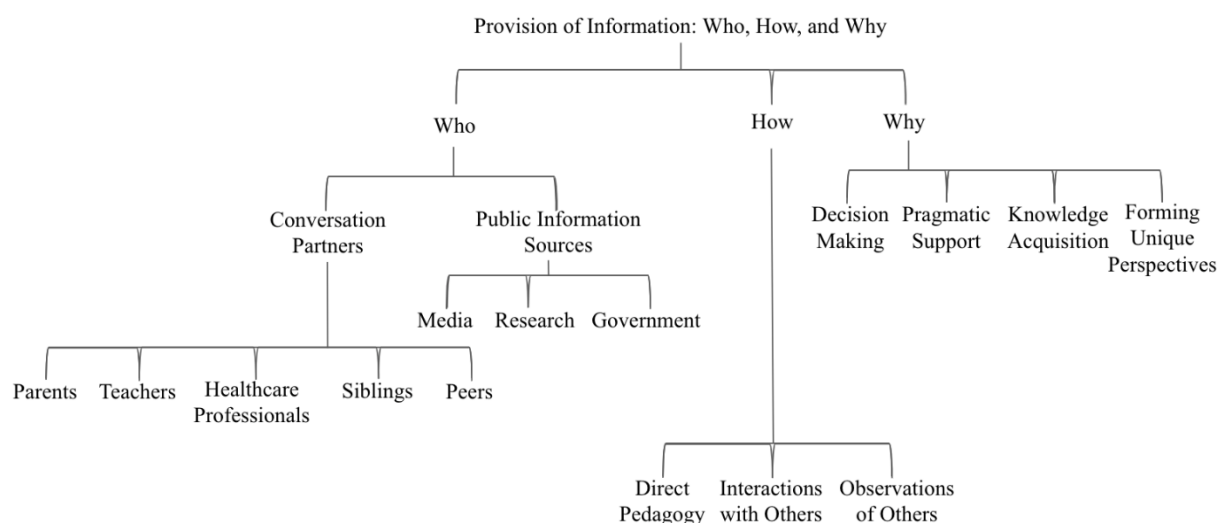


Figure 1. Provision of Information: Who, How, and Why.

From whom did children source their information? Children named at least five types of personal informants and they seemed to meet multiple needs. Twenty-seven children spontaneously identified at least one of their COVID-19 information sources. *Conversation partners* included *parents* (e.g., “I didn't even realize it I had COVID on my first time at daycare. And then Mom told me I had it. That made me very sad.” Nicholas, Age 10, and, “My mom says don't touch anything and I don't until I just put my hand behind my back,” Jeanette, Age 7), *teachers* (e.g., “The teachers want us to be like fairly cautious,” Vera, Age 9, and “I would tell a teacher,” John, Age 6), *healthcare professionals* (e.g., “Go to a doctor” Lola, Age 7, and, “I went to lunch with a person who works at the ambulance center,” Jennifer, Age 10), *siblings* (e.g.,

“Me and my brother use hand sanitizer,” Vera, Age 9), and *peers* (e.g., “Somebody in my class said...” Jodie, Age 8).

Children also turned to *public information sources* and identified three types of sources. These included *media* (e.g., “[A virus is] A very bad germ...I saw this um in a TV show, um, which is educational. It kind of looks like a sea urchin. But in your body,” and “Well COVID is a tiny virus and I did see it on the news a lot...because I heard it on news, and it's nothing to be that worried about,” Kai, Age 10), *research* (e.g., “There was also a SARS COV 1...so they are very related, and so you could have one illness and not know...because it's just common today, but you have the other illness that also can really be deadly...And there are years of fact research like we have FDA 1906 as I know...” Mark, Age 11), and the *government* (e.g., “it is a pandemic, which means it is in multiple countries, it has been declared states of emergencies in many countries and that stuff and governments have been doing a lot to try to combat it,” Mark, Age 11, and “the country in the state, want us to like stay home and not like, and only be in like contact with a certain amount of people we stayed home” Francine, Age 9). Notably absent from children's discussions of information sourcing were schools. Although children did discuss the shift to online schooling, no child named school itself as the place where they sourced their information about the pandemic. Children did name teachers as trusted adults, but in pragmatic support roles.

How. With regard to how children acquired their information, they appeared to make inferences based on *direct pedagogy* (e.g., “My dad was like reading his Economist thingy, and he was like...then he taught us how to wash our hands,” Dora, Age 11), *interactions with others* (e.g., “Me and my brother use hand sanitizer - like for our like school...So then, once after,

usually like after a week of school our hands would all be dry and red,” Vera, Age 9), and *observations of family members and peers* (e.g., “Here’s something that I want to tell you. It affected on some. It affected on Mom and Dad actually affected our Mom a bunch, and it only a little bit for Dad, and um, and [sibling name] often, for me, It didn’t affect me, Mm-hmm a bunch of times. I felt great,” Nicholas, Age 10 and, “I never even got really close to getting the virus. Honestly, I but I know some of my friends did, and I’m pretty sure they like, would, they would just like leave, and they would be gone for like two weeks, because that’s like the period of time. To get better, I guess,” Dora, Age 11).

Why. I identified four main reasons children interacted with informative individuals or entities: *decision making* (e.g., “My parents usually do that. I don’t really do that often,” Keegan, Age Undisclosed), *pragmatic support* (e.g., Interviewer: “Can you explain how you would help others?” John, Age 6, “I would tell a teacher”), or *knowledge acquisition* (e.g., “I saw this um in a TV show, um, which is educational,” Nicholas, Age 10).

Additionally, occasional differences in the decisions and beliefs of others revealed the ways in which children noticed different perspectives and understanding of science and required them to derive their own *unique perspective*. Although children often looked to the adults around them for information, they did not universally agree with the decisions they were making. One child noted that their beliefs about not masking were informed by an ambulance operator (“Um, I started not wearing a mask anymore um when I went to school and um, also I talked to um, I went to lunch with a person who works at the ambulance center and they said it’s better to not wear a mask so you can gain up antibodies.” Jennifer, Age 10), which their parent then interjected was misaligned with their own beliefs about COVID-19 safety. Here, although the

parent held a pro-masking stance, their child's behaviors were informed by the opinion of an external professional. Another child noted when their parent was resistant to wearing a mask and how they intervened ("My mom is not used to masks anymore when when we were at a party she we were at a play it was like um we um when we were in the car waiting for the show to start um the she found a mask and she's like, oh, no, I do not want to wear this anymore. I made her put it on." Rebecca, Age 6). In both cases, we see that children's behaviors are informed by more than parents alone. Although many children looked to their parents as protectors and socializers, how they were interpreting each experience ultimately reflected their insights from additional informants, personal preferences, and individual convictions.

Reasoning Practices

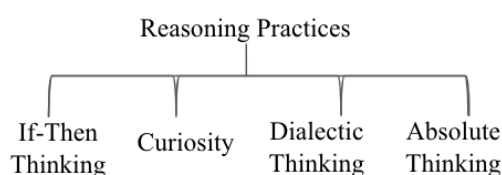


Figure 2. Reasoning Practices.

Many of the children readily engaged with the prompts they were given and I identified four ways in which they revealed their reasoning practices. Children's conversations about COVID-19 with the interviewer demonstrated: *if-then thinking* wherein children took the time to actively consider their beliefs or responses aloud in real time (e.g., "...You could get COVID, and then not feel anything. So I think that some people don't feel anything when they get COVID, so they don't have the same risk," Evelyn, Age 11), *curiosity* wherein children asked the interviewer both genuine and rhetorical questions as an opportunity to learn or share information

(e.g., "Did you know there's good germs?" Nicholas, Age 10), *dialectic thinking* wherein children recognized that two opposing things can be true simultaneously (e.g., "Sometimes it wouldn't be fun because you wouldn't get to spend time with people and stuff, but sometimes it is fun because you can still get to spend time with people it would just be a little bit far apart. Um, so it's fun for some people," Gwen, Age 7), and *absolute thinking* wherein children expressed that something "just is" (e.g., "You can wear a mask, and you won't get COVID," Lola, Age 7).

Eleven children used only one reasoning practice, and of these children, eight used only absolute thinking, with the other three demonstrating curiosity and dialectic thinking. I did not find clear developmental patterns in which of the practices children used or when, which seems to indicate that *how* children consider their pandemic experiences could be related more to their environments and socialization than their developmental position.

Nineteen children used more than one reasoning practice, and for these children different lines of questioning seemed to activate different forms of thought. For example, Lee, Age 8, engaged in if-then thinking when providing rationale for their actions, "[I social distanced] because I didn't want to get COVID, or I didn't want the person to get COVID, so I always wear wore a mask and stayed away," and absolute thinking when asserting outcomes, "[If we didn't try to stay safe] everybody would get COVID some dying, some not. But it'd be very annoying and bad." It seems like children's choice reasoning practice shifted with the demands of the interview and their personal convictions.

Research Question 2: (2a) Did children understand what COVID-19 was, and, if so, (2b) what changes in their everyday lives did children notice during the pandemic?

With varying complexity, all children recognized that COVID-19 was what had been making people sick. Interviewers asked the children to explain the virus and how to stay safe, which lead to the theme I identified as *Perceptions of Pandemic-Related Risk and Safety* (Figure 3). Within this theme I further organized evidence into three sub-themes of children's *scientific knowledge*, *perceptions about safety*, *developing perceptions of risk*, and *COVID-19 is tricky*.

Perceptions of Pandemic-Related Risk and Safety

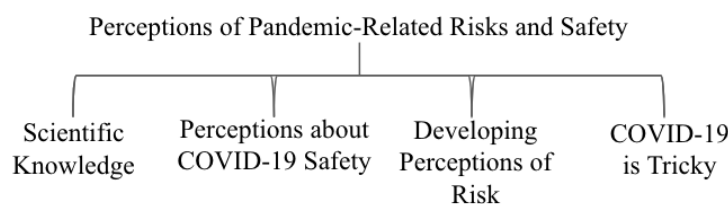


Figure 3. Perceptions of Pandemic-Related Risks and Safety.

Most children's responses reflected a clear understanding of *scientific knowledge*, including processes related to COVID-19, with older children tending to be more elaborative and scientific than younger children. For example, Sarah, Age 5, described that "COVID can like get in your body..." and, when discussing, "Is there anything else you can tell me about COVID and how it works?" stated simply that, "Breathing" spread the virus. By contrast, Kai, Age 8, explained:

"Well, I know a little bit about this. It's like. So, when they're done affecting the other person. They feel like they did their job. They they start to they to make their way out breathing through the nose, mouth, ear or anywhere. When somebody goes outside, they quickly fly out to another person in the country. And this is how it happens when the person is walking, and the person breathes through its nose out and back in, it slowly

crawls into your nostril, into your body, slowly, and once you know it the next day you are feeling like crap. And that's how I know it spreads.”

Within this example, Kai personifies COVID-19 and assigns motive, while still noting accurately that COVID-19 travels through the air and is a respiratory illness. Some children's descriptions relied more heavily on imagery, with one child describing the virus as “a ball” Keegan, Age Undisclosed. Notably, eleven children utilized metaphors when describing their COVID-19 experiences. Of those eleven children, ten also personified COVID-19 in a way similar to Kai. Metaphors and personification were used across ages, but older children tended to include more scientific language in their responses than younger children, while retaining metaphor. For example, when asked to elaborate on spontaneously referenced vaccines, Quinn, Age Undisclosed, shared “Oh, the vaccine, of what I know, is like it like trains your blood cells to attack the virus, and you, get it I guess.” Within the example, Quinn notes “blood cells” and the “virus” when explaining vaccine efficacy.

The children shared their *perceptions of safety* related to COVID-19-related risk and about safety measures. Their responses emerged, in one part, from interviewer-directed (i.e., prompted) questioning (e.g., “Does everyone have the same risk of getting sick from COVID?”), and, in many parts, as unprompted elaborations when generating safety knowledge (e.g., “What do you do to keep yourself safe from COVID?”).

Twenty-eight children expressed that safety measures on the whole were helpful in avoiding COVID-19. Some children dialectically recognized the costs of safety measures and variants in the measures that might impact their usability or efficacy and included some solutions. For example, seven children specifically recognized the utility of masks while also disliking them (e.g., “It's kind of hard to breathe because I have glasses too.” Marina, Age

8). There was recognition of multiple types of masks, some of which were more wearable than others (e.g., “I do not like wearing them ...But when we went to the store we found this fire mask, and I kind of liked it. So we bought it, and I would wear it every day, and it's very soft, because I can breathe super well, and every time I go somewhere I can just lift it up,” Kai, Age 8). Another child noted that while sanitizers were effective, they also made your skin dry (“Yeah, they're supposed to like um clean off the like um kill the germs on your hands, but sometimes they will also like kill some of the those will dry up some of the moisturizers in your hands.” Vera, Age 9). Finally, two children did not like safety measures or find them helpful (e.g., “...masks don't do anything. Social distance doesn't do anything,” Simon, Age 12).

In response to direct questioning, children demonstrated their *developing perceptions of risk*. Seventeen children firmly recognized health variability in risk levels (e.g., recognizing that older people were at greater risk, and sometimes aware of additional compromising risk factors (e.g., cancer therapy, asthma), Five children had a moderate understanding of risk and could either provide an example of a risk or offer an answer to whether some people were at higher risk than others of contracting COVID-19. Finally, eight children who were primarily five to eight years old did not understand risk. Of the children ten years old and older, only one child was unable to define or describe risk. Most interestingly, Rebecca, despite being six years old, did provide some risk analysis as well.

Interviewer: So if I were to say that someone is at risk of getting sick from COVID what does that mean?

Rebecca: That means that they're going to get COVID.

Interviewer: Okay. Got it. And does everyone have the same risk of getting sick from COVID?

Rebecca: [Shakes head “no”]

Interviewer: No? Okay. What would make some people higher risk than others for getting sick?

Rebecca: Um, if someone saw someone again and and they still had COVID, they would get more COVID than others. They would get more COVID.

In this example, although Rebecca needs some support to define risk, once she knows what risk is, she confirms that not everyone has the same chance of contracting COVID-19. Her response is unusual because, typically, the ability to comprehend risk tends to develop around early adolescence (ages 10-13) alongside development of the amygdala and pre-frontal cortex (Gabard-Durnam, 2014). Because the pandemic caused prolonged exposure to high risks, some children may have developed basic risk comprehension earlier than would have otherwise been expected. Moreover, Rebecca provides a contextual risk factor (i.e., seeing someone again who still had COVID-19), which introduces context as another point of infection.

Along with the recognition of personal risk factors, children recognized contextual risk factors. Examples include: being around people with “bad habits”, or who are not themselves masking, or simple numbers of people around them (e.g., “Kids are like sometimes more easily to get COVID, because they have bad habits of doing things that they shouldn't be doing. But sometimes adults can also easily catch COVID, because they're out at work all day, and we don't know what's like out at their office or like places, so they might be able to catch COVID. Vera, Age 9).

The children often seemed to understand that *COVID-19 was a tricky thing* (e.g., “You could be sicker than you think or you could not be as sick as you think, but it could still be dangerous for other people,” Betsy, Age 9 and, “Maybe if people touch your toys and when you

have COVID and then they didn't know that like could get COVID.” Sarah, Age 5). Nicholas, Age 10, acknowledged the nuance in the role of germs, stating that:

“...You don't see it, but there's actually invisible germs on your hands...you like have to wash them...six times, actually, maybe three times a day. Because six times a day- the world won't survive with germs, you know. Did you know there's good germs? Those if, if every germ in the entire world, even the bad ones and the good ones, were- um this entire paradise for us to live would be just a big, big, big wasteland. So that's why I-I don't, I want to wash my hands like three times a day, so it could be. So this world can still be living.”

Most affirmed that you could be as careful as possible with safety measures, but you could still become sick (e.g., “and sometimes people were being sick, and they didn't know it,” Lola, Age 7). Six children were less clear about this point (e.g., Interviewer, “If someone does everything they're supposed to do to protect themselves, can they still get Covid?” John, Age 6, “Well, sometimes no.”), with no additional evidence in their interviews indicating a more nuanced perspective of COVID as a complicated terrain to navigate.

Outcomes of COVID-19

Through their elaborative disclosures, the children conveyed what changes they noticed in their lives as *Outcomes of COVID-19* (Figure 4). I categorized children's stories as *personal experiences*. Additionally, children understood their experiences in context via *social comparisons*.

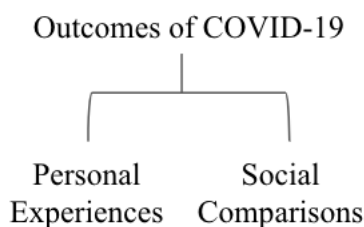


Figure 4. Outcomes of COVID-19.

Throughout the course of their interviews, the children turned to their *personal experiences* to express their understanding of the pandemic. It was clear that the children recognized the tremendous shifts in everyday lives. When defining COVID-19, Angelo, Age 10, notes that, “It’s basically a virus that is infecting a lot of people and sometimes keeping people away from their family or friends because of this work that they’re trying to do to stop COVID, and it’s becoming a really big change to the world.” Many children made similar, spontaneous assertions, stating throughout the interviews their COVID-19-related experiences (e.g., “Well, mom, we, I had to stay home with my mom and dad and family. Um, we, and, everybody, we, on my birthday, we still had COVID on my birthday. On. My. Birthday. That was the worstest thing ever! And and I had to wear a mask when [friend’s name] came to give me presents and a bunch of balloons.” Nicholas, Age 10). Interestingly, I saw socioeconomic status emerge implicitly (e.g., “We have a new house,” Rebecca, Age 6, and “I mean my parents, they switched me from a public school to a private school right before COVID and so that was just the right time, because I wasn’t really affected by because the private school’s in person,” Mark, Age 11) and, in one case, explicitly. In the implicit cases, children discuss the results of decisions that depended on their families’ socioeconomic position. In the explicit example, Vera, Age 9, provides a commentary on her family’s wealth status, “I usually bring my own lunch now, because now um lunch is like really expensive...Because, like they think um the pandemic, have

died down.” Through her statement, she reveals that the pandemic was financially impactful for her family and offers an implicit perspective on whether or not the pandemic has come to a close. Her noticing the pandemic’s position offers an explanation for why the cost of lunch had changed.

Children placed themselves in the context of others through *social comparisons* (e.g., “Um, some people might might to have actually stay home longer or like wear a mask more than I did,” Francine, Age 9). Their comparisons primarily highlighted who may be at increased risk of contracting COVID-19 and why. Children understood that people both older and younger than them could be more at risk of contracting COVID-19. They also acknowledged that pre-existing health conditions (e.g., asthma) could make it more difficult to recover from COVID-19 or that COVID-19 could turn into an extended illness (e.g., “long-haulers”). Although the children did not always explicitly compare themselves to others, by acknowledging that there were elements of the pandemic or personal illness that were more difficult for some than others, they implicitly put themselves in relative comparison to those around them. Social comparisons were often offered in conjunction with other evaluations, including control beliefs, affect, perceptions of COVID-19, and risk assessments.

Research Question 3: What were children’s affective responses to the changes happening to and around them?

Children frequently described their affective states, which included valenced interpretations of changes related to COVID-19 (Figure 5). Twenty-one children spontaneously included affect in their interviews. Children did not always nominate the exact emotions they felt (e.g., happy, mad); however, a clear picture emerged of the types of events that were evocative

for them (e.g., I liked, I didn't like). As seen below, children seemed to experience negative affect, positive affect, and negative and positive affect dialectically.

Affect

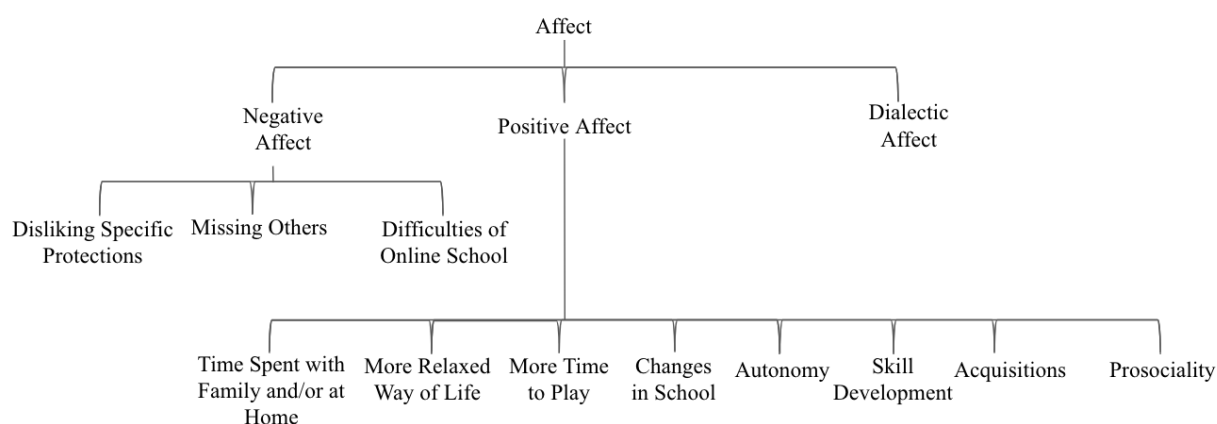


Figure 5. Affect.

Negative Affect. Negative affect emerged for 17 children in four main ways: *getting sick or dying from COVID-19* (e.g., “like some people feel very sad and it's almost like there's no cure for long haulers it's just a disease that like. it's just a little bit of covid that kind of really found the place to totally like to destroy a lot of your livelihood.” Mark, age 11), *disliking specific protections* (e.g., “[COVID-19 tests] hurt a lot.” Arnold, Age 6), *missing others* (e.g., “... just COVID is like taking people away from their friends and families and stopping you from doing more things that you could do when COVID isn't around.” Angelo, Age 10), and *difficulties of online schooling* (“I didn't really like it, because it was a little bit hard to like sometimes they'd be like it would break up and you couldn't really hear like how you did with something so it was kind of like weird. It was just not- it was different than regular school because like, regular school is like, you get like, and then like, you have to get- everything was so cluttered because you have to bring everything home. Everything was on the table so yeah.”

Francine, Age 9, and "I pretty much missed the rest of third grade, because they would like give us a Kahoot, and then like twenty minutes of reading, and then we had nothing. So it was kind of hard to learn anything," Evelyn, Age 11).

Positive Affect. Positive affect emerged for 29 of the 30 children. At the end of the interview, as a way to ensure the interview ended positively for the children, because the topic of COVID-19 could potentially elicit negative memories or emotions, we prompted the children to describe any good things they experienced during COVID-19. With some prompting, all but one child generated a positive outcome from the pandemic. Six children spontaneously reported positive feelings or experiences related to the pandemic in nine different instances before receiving the final interview prompt. Children had a lot to say about what they liked. Both spontaneously and when prompted, children noted eight categories of positive outcomes: *time being spent with family and/or home*; *a more relaxed, chill way of life*; *more time to play*; and *less, no, or differently constructed time in school*. Children also noted greater *autonomy*; *developing an existing skill or developing new skill*; *acquisitions*; and *moments of prosociality*.

Most prominently noted of these was the interrelated set of outcomes of *more time to be with family* (13 children) and *being home* (6 children). There was also an appreciation for a more relaxed way of life which was clearly articulated by five children although implied in other comments. There was the theme of enjoying more play time (6 children) which we saw as distinct from the theme of a more relaxed way of life. Although having time to play might be seen by adults as a way of relaxing, I separated these themes, as the examples the children provided for play seemed to be identifying a highly active, focused, and engaged way of being in the world. As Josie, Age 6 explains:

“Like sometimes there's this little tray and I stay home like [have] a rest on the couch. I, and I get under a blanket and put this little tray over me, and I can like watch TV and do stuff like. And like I can color and do whatever stuff I want. And then, And then I get, usually, my daddy sits, like every morning my daddy sits in the middle, so like when I'm sick, I stay over there, and [sibling name] like daddy sits, and then my daddy sits in the middle, and then, and my brother sits on the other side.

Herein, she shares her excitement at family time, getting to do what she wants, and resting.

Children also discussed that they had *less, no, or online school*, which, despite its challenges, was generally seen quite positively. Of the children identifying the reduction or relocation of time in school, some simply reported the change as a “good thing” that they had no school, whereas others expanded on the connection to the time it afforded them for being with family and home, enjoying a *more relaxed way of life*, and/or *having more play time*. More specifically, two children also expressed comfort in easier personal maintenance (e.g., not having to put on clothing for school or fix their hair), one enjoyed staying in bed a little longer, one enjoyed eating breakfast with the class, among other benefits. Alongside children's reported benefits of remote learning for this reason, they noted how the extra time left by adjusted school days provided space for other personal development (e.g., “you kind of found ways to like entertain yourself,” Dora, Age 11).

Some other unpredicted outcomes seemed to be the opportunity to *develop pre-existing skills* or sports they enjoyed (4 children); three others specifically articulated their enjoyment of *learning new skills* (e.g., origami, crafting, playing an instrument). Of particular interest was children's recognition of their increased freedom and *autonomy* (5 children) and appreciation of *prosociality* (2 children). Three children also noted *acquisition of things* (e.g., a new pet, a pool,

a new house). Two children responded to the prompt negatively (i.e., “not much,” Brendan, Age 9, and “I don't really think that there was anything good that happened to me, because it was kind of annoying that I had to stay in my house, and I couldn't get out of that house” Marina, Age 8), although Marina did generate skill acquisition as a positive outcome when prompted again.

Causes for children's positive affect closely resembled the positive outcomes shared through the final “*good things*” question: *family and friends* (e.g., “Some people may get some people like some food just to be nice, so they can...be helpful to and help you...when my mom had COVID, my friends brought over us doughnuts.” Gwen, Age Undisclosed), *a more relaxed way of life* (e.g., “Then there's something that really enjoys me: you get to stay in bed.” Jodie, Age 8), *differently constructed time in school* (e.g., “Um, that um I didn't get to go to school. That was pretty nice.” Austin, Age 7), and *greater autonomy* (e.g., “sometimes I've taken the liberty of quarantine to do stuff I want to do that I can't do when I have other people around me.” Angelo, Age 10).

Dialectic Affect. In some cases, the children's negative and positive affective expressions emerged *dialectically*. For them, the bad things were coupled with welcome changes, recognizing both the things they found challenging and the ones they found rewarding or that the same thing could be both challenging and rewarding at the same time (e.g., “Um, it wouldn't really be fun, because sometimes it wouldn't be fun because you wouldn't get to spend time with people and stuff, but sometimes it is fun because you can still get to spend time with people it would just be a little bit far apart. Um, so it's fun for some people. But, um, so it's still kind of fun. And that you don't get to talk to people. If you still get to talk to people you may get to feel a little...it may make it funner.” Gwen, Age Undisclosed). It is worth noting that excerpts were

rarely assigned a single code, especially when looking at affective responses. This likely reflects children's nuanced understandings of COVID-19, draws from personal experiences, encompass complex emotions, and reflects emergent values. We can see this clearly as Dora, Age 11, describes the shift to online school:

Well, we did it because well, we couldn't really go to school when when it was really really bad, and um, you know, in those days, it didn't seem like we would be getting out of it anytime soon. It just felt like it'd be going forever. But um! We would just well, we uh I kind of liked it honestly. I liked remote learning, basically what we did...we would just go to class on zoom, and we, he would like, share a screen and teach us about, you know, whatever. And then, after like a little class period, like an hour long zoom meeting, we would leave, and then he would have. We had this like Google classroom, where he would show us. He would give us assignments to work on, and we would have to work on them and just turn them in, and it was pretty chill. Honestly, I liked it. Um, we. And then we had, like some other Google classrooms like we had PE sometimes like we had. We had PE zoom meetings when they just made us exercise in our rooms and stuff... [laugh] Yeah, it was kind of weird. But, and then we also had like um. We also had a like like we're like community meeting, and like, except just on a Zoom meeting from my room and stuff. It was really nice. We only had like one to two class periods. I feel a day, and it was so like, you could just get up like, put on a hoodie or something, and just like go to class in bed and like eat breakfast with the class. It was so nice I really liked it. I mean the part I didn't like was like not seeing my friends and stuff, but I get to like, call them and stuff, but I and I know

It's not the same as seeing them in person...for me like remote learning was way less stressful than in person learning.

Here, the negative feelings about the impact of infection, the seemingly endless pandemic, and distance from friends were coupled with the benefits of a relaxed learning environment, the comfort of staying home, and sharing a meal with the class. Dora's, Age 11 response highlights their nuanced, silver-lining thinking.

Research Question 4: What values developed for children during the pandemic?

Children's reasoning, disease comprehension, personal experiences, and affect interacted with their emergent *values* (i.e., standards for behavior, evaluations of what's important). In some instances, children made sense of the pandemic by identifying their *values* (Figure 6). In other instances, children used their values to guide their affect and reasoning. Four main themes, *protection, social connectedness, control and personal agency, and accountability* stand out as particularly salient to the sample's collective worldview as they grow out of the pandemic. Even if extant before COVID-19, each theme seems to be reinforced by disease comprehension, personal experiences, and affect. As a complement, children's values and perspectives seem to influence their affective responses to novel pandemic-related situations and direct their personal actions.

Values

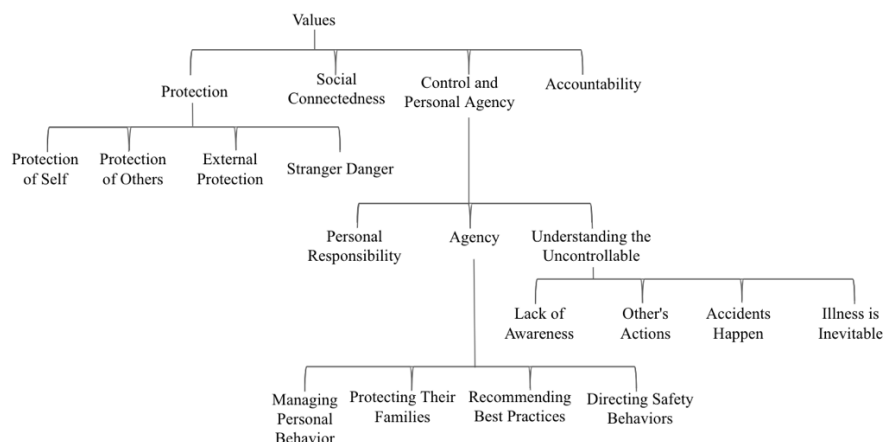


Figure 6. Values.

Protection. Every child claimed that personal safety was important, but children differed on how they engaged with protection. Children understood protection in two ways. First, they understood protection as something that they could give *to* themselves or others (i.e., *protection of others* and *protection of self*; e.g., “To not spread germs and not get germs,” Lee, Age 8 and, “[We wash our hands] so we don’t get germs on our hands and get sick.” Mindy, Age 8). Because of the interview structure, all children at least mentioned either protection of self or others as reasons people chose to engage with COVID-19 safety measures. Second, they understood protection as something that others could give or take *from* them (i.e., *external protection* and *stranger danger*).

Much like with information sourcing, the children recognized parents as external protectors (e.g., “Um so when I was at this school I’ve been in kindergarten, my friends, and two of them were on the Zoom because they would, they were scared they would get COVID ‘cause that was when COVID just came. So they were scared they would get COVID and their parents wanted them to stay with them, so they did the same for class,” Lola, Age 7, and “My dad tells me to not touch other people, so I do my best to not touch other people,” John, Age 6). One child

event went so far as to notice that attending to safety was adults' job and not kids' (e.g., "Also, like I don't know. I never really knew what it was. My parents do. So. Yeah," Evelyn, Age 11).

Four children shared that God would keep them safe (e.g., "Well, I don't usually wear masks, but I'm always fine. Because Jesus is protecting me from the flu" Keegan, Age Undisclosed) or that they could call on God to help keep others safe (e.g., "I would um pray [to protect others from COVID]" Quinn, Age undisclosed).

In addition to concerns for receiving or providing protection, three children described their fear of strangers (i.e., *stranger danger*) because of potential for COVID-19 infection (e.g., "Sometimes I wear a mask, because sometimes I don't feel comfortable with not wearing a mask, because there's a lot of things that people usually get germs on, and I usually don't like um to like have contact with anyone that I don't know, and sometimes they might have something on them that I don't want." Vera, Age 9).

Social Connectedness. Children's fluency with alternative forms of connection (e.g., Zoom, distanced play) offered an opportunity to see the juxtaposition between distance and intimacy that may continue to be a point of relevance or contention in schools, social settings, and, eventually, workplaces. For example, Gwen, Age 7, described changes in play.

It wouldn't really be fun, because sometimes it wouldn't be fun because you wouldn't to get to spend time with people and stuff, but sometimes it is fun because you can still get to spend time with people it would just be a little bit far apart. Um, So it's fun for some people. But um, so it's still kind of fun. And that you don't get to talk to people. If you still get to talk to people you may get to feel a little. It may make it funner.

Gwen notices that play wouldn't always be fun but that there were still opportunities for connection and fun even when distancing orders were in place. Dora, Age 11, explains, "I mean the part [about COVID-19] I didn't like was like not seeing my friends and stuff, but I get to like, call them and stuff, but I...know it's not the same as seeing them in person." Through her statement, she contrasts the tension of missing friends with having the means to continue to be in contact with them. Both Gwen and Dora notice the difference in the quality of interactions they can have while needing to be apart.

Control and Personal Agency. All children across ages expressed at least one belief about control. Once again, these responses emerged both as responses to interviewer-directed questions (e.g., "How much can you control whether you get sick from COVID or not?"), and through children's choices about the direction they wanted the conversation to take. Within their interviews, children reasoned about control in three unique ways. They discussed their beliefs about *personal responsibility* (i.e., whether they themselves or others were responsible for contributing to efforts against the spread of COVID-19), their own *agency* (i.e., whether they could affect changes in the behaviors of themselves and others or in the environment more broadly), and their *understanding of the uncontrollable* (i.e., what about COVID-19 couldn't they change, even if they expressed the desire to).

Twenty of thirty children expressed that individuals held some degree of control or responsibility within the COVID-19 pandemic. Beyond acknowledging whether or not COVID-19 safety precautions were effective, children across ages made claims that it was important for people to do these things for the benefit of people more broadly (e.g., "Um if you're sick. If you're sick and and you have a different person that's sick and they would get the person, it

would get um. It would get the other person sick so that's why you gotta wear a mask," Austin, Age 7). This level of prosociality was reflected by multiple children (e.g., "Well, [quarantining is] kind of the same thing, because you don't want other people to get sick. So if you're out there and you're sick, then you might spread it to other people. So, you want to stay home, so you won't harm other people," Quinn, Age Undisclosed, and, "So um, you basically um want the mask to cover your nose and your mouth, um because if you sneeze or cough, you want to be able to make sure that no one else gets it" 12CN92, Age 9)

Twelve of thirty children spontaneously commented on their own agency within the constraints of the pandemic. How children felt they could contribute included *managing their own behaviors* (e.g., "So I think school is the best way to spread germs. But so you've got to stand six feet away from each other, or wear a mask and wash your hands every time you [inaudible]" Jodie, Age 8), *protecting their families* (e.g., "I protect my sisters and my mom and my dad when I said wear a mask and when you go outside," Jeanette, Age 7), *recommending best practice* to interviewers (e.g., "Well, one thing, you should always wash your hands for twenty seconds" Jodie, Age 8), and *directing safety behaviors* for parents, siblings, and friends (e.g., "I usually remind them to wear a mask or something. But, my brother, he doesn't listen because he has a habit of doing those bad things," Vera, Age 9). In each instance, what the child shared indicated an underlying belief that what they had to say mattered to those around them and that they were collaborators in deciding what safety precautions the family took. This was especially evident in Nicholas, Age 10, who provided the interviewer a recommendation to minimize the number of germs they acquired:

"Here's, here's a tip. Guess what? Shaking hands, it would get other germs, other people's germs on you, and make your germs on the other person. High-fiving. Not that much. But fist bumps? Fist bumps are fine. It would get less germs on you."

Mark, Age 11 also provided advice:

"... And, just like make sure that you're very cautious – stay away from people and do not like, but stay home at like stay home try to do everything you can at your home. Like that you need because I mean order food online do all that just make sure you don't have to go in public and risk infection to someone else you know."

Both of these children acknowledged the risks of COVID-19 and offered insights into best practice to keep germs away from others. Older children tended to speak more agentically than younger children, which seems to coincide with children's developing executive functioning (Diamond, 2018).

Coupled with children's beliefs about personal control was the understanding that many things about COVID-19 were also *beyond* their control. Twenty-seven of the children asserted at least once that some aspect of the pandemic was beyond their control. Children across ages acknowledged that people, including themselves, could have COVID-19 and be *unaware they are sick* (e.g., "If you have Covid and you don't know you can give it to other people," Lola, Age 7, and "If you had Covid and you thought that you didn't have it anymore. And you actually did," Marina, Age 8). Children noted that, although they might try, *others' actions were uncontrollable* (e.g., "when I try to like, make her wear a mask like she doesn't listen," Vera, Age 9, and "Yeah, well not really because you're not really because, like some people get COVID cuz they don't wear their masks," Bridget, Age 9). Others still acknowledge that *accidents happen* (e.g., "Somebody has spread something to them on accident and I don't think they were supposed to

know that they got it until they tell- they get test [ed] so it's not their fault that they got COVID," Jennifer, Age 10, and "Sometimes it's just a little accident that might happen. So, I don't really blame you if you were following it, but then you got COVID," Angelo, Age 10). And, lastly, some noted that the *illness itself was nearly inevitable* (e.g., "um just pretty much same thing, masks, vaccine, social distancing and I've really just been cautious that's like really it's so common that you really can't like do anything to issue like an ultimatum on a virus," Mark, Age 11; "because like you could um if you're like, super cautious like, it was a long pandemic, pandemic like you're bound to get it at some point I feel, not bound to, but like you might, so it just like, you can't control everything, you know," Dora, Age 11, and "Um, that I, well basically you can't really control COVID-19, because those are separate things from your body. So you can't really control that. So you're just going to have. You might be able to control it in some ways if you try to keep, stay safe, and yeah make sure you don't get sick," Angelo, Age 10). These provisions of both agency and understanding the uncontrollable engaged dialectic thinking because children could recognize that they could control some things and not others.

Accountability. One question late in the interview sought to illuminate children's moral understanding of COVID-19. Children answered a question to reflect on COVID-19-related morality (e.g., "If someone does get COVID, does that mean they did something wrong?"). Fourteen children spontaneously offered moral judgements on pandemic-related actions, and twenty-six children generated a moral judgement when prompted. Twenty children total noted that getting COVID-19 was not wrong. Nine children simply stated that, no, if you get COVID-19, you did not do something wrong with no additional explanation. Eleven children who agreed no moral transgression had occurred provided elaborations noting that it was impossible to

always know if you had COVID-19 (“Oh, no. It’s just, sometimes you get COVID and you don’t even know it how or uh...” Lola, Age 7), that *you cannot control viruses or the actions of others* (e.g., “No, it’s just that the germs do that to make people sick.” John, Age 6), that *people sometimes make mistakes* (e.g., “I don’t really blame you because you could have made a slight mistake. So I don’t really blame you.” Angelo, Age 10), or that *accidents happen* (“Somebody has spread something to them on accident and I don’t think they were supposed to know that they got it until they tell- they get test so it’s not their fault that they got COVID.” Jennifer, Age 10). Through each, children noted that whether or not someone did something wrong was dependent on the context of the action.

Through the judgment-making process, I gained insights into both what the children thought about the intersection of illness and responsibility and their rationale for why. Children’s rationale for moral decision-making frequently aligned with their beliefs about control. Older children tended to be more elaborative on this point than younger children. For example, Mark, Age 11, shares his perspective that what someone does when they’re aware of their illness, not being sick itself, impacts whether their actions are right or wrong because their actions could impact others:

“Oh no, getting COVID, getting COVID, or spreading to get to another person is completely not wrong like I mean now like, if you pretty much if you didn’t screen after you found out YOU had COVID. And still went public went going to public going in public in it, or anything and in large spaces like well that can be something wrong because you could be a endangering a lot of people who might not be able to get the vaccine yet or any of that and, like just. Getting COVID is not wrong spreading COVID if you tried your best or you didn’t know we when you

spread it to them, then it's okay, like, I mean it's a virus. You can't, you can't stop yourself from ever, but you can try to contain it.”

When people do have information about their health status, he concludes that they should consider it when making decisions about their actions.

To that end, others noted that there is a level of moral accountability people should hold when considering the spread of COVID-19 because personal actions could have far-reaching consequences. That accountability was framed either negatively or positively. In some cases, this was spun positively (e.g., “We just are doing some better things, so that they don't get sick” Brendan, Age 9). In other cases, this was spun negatively either because of a failure of the person to take proper precautions (e.g., “Um, Actually? Yes...They didn't wash their hands, and they didn't wear a mask, they didn't cough and sneeze in their elbow, and they didn't eat healthy food.” Nicholas, Age 10 and, “Yes...They didn't wear a mask.” Amanda, Age 6) or because of the great risk COVID-19 could pose to others, if allowed to spread (e.g., “Yeah. When- Yep, it it does mean something really wrong because a virus is dangerous.” Russ, Age 10).

Frequently, moral judgements were co-coded with approaches and reasoning. For example, Dora, Age 11, notes levels of control and COVID-19 severity when evaluating moral responsibility:

“I think you um. It kind of depends, I think, because some people like wear the masks below their nose, or, like don't get the vaccine. Don't like, Don't really um, “believe” in COVID. They're like COVID isn't a thing, but, like you know, fifty million people died so, it kind of is, so um, that they like. I feel like those people are more likely to get it? I feel like they have um. They could. They could like control, if they, I feel like you can to some degree control whether you, if you get

it or not. Obviously, if you're just like um, you don't know if someone if someone doesn't have it like. Sometimes they don't even like get symptoms of it. So if you're hanging out to someone, and they don't even know they have it. You didn't really have much control over that. Because how would you even like? How would you know if you have it? If you aren't getting symptoms, you know?"

Here, Dora moves dynamically through reasoning processes to derive insights on many of the more content-based themes. She reasons through if-then thinking to conclude that people who don't believe in COVID-19 are at higher risk, which she contrasts with the evidence that fifty million people had died from the illness. She understands that you can have control over your own actions but offers that you don't have control over what others do. Lastly, she uses if-then thinking to consider that, despite the control that you do have over your actions and that others have over their actions, people are not omnipotent and may lack awareness of having the virus at all, leaving some amount of personal risk and acknowledging that accidents can happen.

DISCUSSION

The goal of this study was to investigate how children understood the pandemic from their own perspectives and at a point in time when COVID-19 procedures had been in place for more than two years. Although initially designed to capture children's understanding of COVID-19 safety measures, what children offered through their interviews was a robust, often spontaneously generated, look into their meaning-making, beliefs, experiences, and emotions. The timing of the interviews afforded us the opportunity to learn how children were organizing

their thoughts within the context of the pandemic as an increasingly known experience and as they had adjusted to massive changes in their day-to-day lives.

In this study, I utilized 30 interviews from American children who shared their knowledge of and perspectives on COVID-19 via semi-structured interviews. I expected that children would utilize multiple sources, which they would use in the service of understanding what COVID-19 was, reasoning about the pandemic in developmentally distinct ways, and having independent emotions and perspectives, both positive and negative, about the pandemic. The 5- to 12-year-old children did express nuanced pandemic-related reasoning processes, reflections, and emotions. Especially surprising, some children in the younger half of our population (5- to 7-years old) did express a knowledge of virology and moral decision-making that was beyond what we would typically expect for children in that age range (Esposito & Bauer, 2018, 2019; Rizzo & Killen, 2016). Children in the study largely endorsed COVID-19 as a legitimate health risk. As such, they considered their own agency in keeping themselves and those around them safe, recognized the positive and negative outcomes of the pandemic, and invoked their contexts, going so far as to include discussions of the government and the socioeconomic changes their families experienced. Understanding how children discussed their experiences will be helpful for parents, educators, and trusted adults interested in fostering conversations with children about challenging life events. Children's understanding of the pandemic as they emerged from its worst years, with new access to vaccines, which prior to offered treatment for their parents and not them, continues to be relevant as their understandings may cascade into life-long shifts in their perspectives about relationships, education, personal agency, and social accountability.

Constructing Pandemic Understanding

What children came to understand was a combination of their lived experiences (e.g., procedures within schools, interactions with siblings, and observations of their peers) and knowledge acquired from conversations about those experiences with conversation partners and from more publicly available sources. How children ages 5-18 learned about the pandemic depended on the pedagogical approach of their schools, home learning, and regional education policy (Greenhow et al., 2021). Moreover, children's culture, family experiences (e.g., grandparents in the home, caregivers who were healthcare workers) informed what children believed about the pandemic (Irwin et al., 2022).

Parents served a critical role in shaping home learning, deciding education setting, and scaffolding children's emotional responses to the pandemic. As shown previously in earlier parts of the pandemic and across countries, parents in this sample tended to be the primary source for children's information on COVID-19 (Bray et al., 2021). Although children clearly attended to siblings, peers, and a variety of other adults in some capacity, parents served in *every* capacity as decision makers, pragmatic support, and in providing knowledge acquisition.

Unique to my work is the focus not only on *what* children were reflecting about the pandemic but *how* they were instilling meaning into their experiences. Children's interviews spontaneously encompassed their personal stories. Past pandemic-related literature notes the importance of storytelling, including content and structure, on well-being (Flatt et al., 2023; Pascal & Betram, 2021). Through understanding children's reasoning processes as they shared their stories, researchers can offer insights on how to effectively facilitate conversations about complex topics with children in young and middle childhood. If adults know the logic that children follow, they can focus on providing information that both addresses children's concerns

and presents the information in a comprehensible way (Strommer et al., 2022). I note that when children shared their experiences and responded to direct questions, they derived meaning in four distinct ways.

Through *if-then thinking*, children in this study moved between assertions to draw conclusions. If-then thinking was used by children across ages. If-then thinking may support children's ability to contend with complex topics (Menendez et al., 2020) because children are able to draw conclusions logically through connected ideas and across contexts. I saw this in two capacities within children's interviews: in their scientific thinking and in their moral decision-making. First, this skill with thinking scientifically develops in middle childhood (Esposito & Bauer, 2018, 2019). That is to say, older children (10-years-old) are more able than younger children (6-years-old) to connect information from multiple sources to draw new conclusions (Esposito & Bauer, 2018). Through their scientific discussions, older children did draw logical through lines for how and when COVID-19 would spread. Additionally, participants' use of conversation partners and public information sources suggests that what they knew about the virus could be derived over time. For younger children, who did have scientific knowledge, knowledge integration across sources was less clear. Together, these findings suggest that within this sample knowledge integration may still be happening primarily for older children. Nevertheless, children across ages still managed to construct a knowledgebase for COVID-19, although still making fewer causal linkages.

Second, children in the sample also used if-then thinking to define moral contingencies wherein actions were "good" or "bad" depending on the knowledge and intentions of the actor. Children making moral decisions often used both if-then thinking and dialectic thinking simultaneously. When making moral judgments about illness in an experimental setting, Probst

and colleagues (2023) found that children endorsed safety measures when risk was high and that children were more critical of intentional vs. accidental transgressions. In this study, children's responses to, "If someone gets sick with COVID, does that mean they did something wrong?" showed evidence for moral reasoning and decision making in a real-life scenario. Many children noted that, if the transgressor was trying their best to keep others safe, then they did not do something wrong. Conversely, children did view spreading COVID-19 as wrong, if the person who was ill was aware of their illness. They did not view spreading COVID-19 as wrong when someone was not aware that they were ill. My findings prompt further investigation into when and how children who experienced the transition from young to middle childhood utilize if-then thinking now that the pandemic is past and whether facing scientific complexities and moral dilemmas early in life informs how they will process similar situations moving forward.

Children in the study also revealed dialectic thinking, which engaged the inherent duality in a challenging situation, and absolute thinking, for which evaluations and/or judgments were clearly made with little or no room for modification. Whether children engage in dialectic thinking, absolute thinking, or both, could be a reflection of their social cognitive processes (e.g., Theory of Mind). Theory of Mind, the ability to recognize that others' have subjective mental states typically develops in early childhood (Shahaeian et al., 2014). When children in the sample made decisions about others' accountability for spreading illness and about their social responsibility, many noted that there are circumstances where people may not be aware they're sick, acknowledging the *nuance* that goes into decision making. They also noted that if people went out and engaged with others when they knew they were sick, those individuals were morally responsible. In each case, making those decisions required children to take the perspective of the actor in the situation. The implications for dialectic thinking when processing

the pandemic are generally positive (Pascal & Bertram, 2021) and could reflect positive coping processes (Cauberghe et al., 2022; Shi & Wang, 2021).

Children who used absolute thinking could have done so either because they were still developing the cognitive skills necessary to take multiple perspectives or because they had already considered multiple perspectives. To the former, the youngest children in the sample may still be learning to take other's perspectives. Because of this, they may assume that others are working with the same values and knowledge that they themselves have. To the latter, older children who used absolute thinking could have already established their perspectives through past reasoning. Absolute thinking may also reflect children's strong moral decision making (Probst et al., 2023).

The children in this study expressed curiosity, through which the interviews became opportunities to exchange insights. Curiosity in this population was different from questioning in early pandemic literature because the questions children were asking weren't anxious or fearful (Menendez et al., 2021; Ünlütürk et al., 2022). Instead, the children's questions were asked in earnest, with some being asked with the goal of exploring a topic together and others being asked rhetorically as an opportunity to share insights. Thus, children were expressing curiosity and engagement with the scientific content in ways that support their growth as independent and engaged thinkers.

This theme also overlaps with children's expressed desire to contribute to conversations about their care. In addition to the value of supporting children's curiosity and engagement the interviews seemed to provide children with additional opportunities to share their knowledge, which could increase feelings of self-efficacy (Ardelt et al., 2005). Because self-efficacy is beneficial for social and emotional well-being (Consolazio et al., 2021), such opportunities might

support a cascade toward positive mental health. I was enthused, then, to see that the interaction between three codes (i.e., curiosity, agency, *and* unique perspectives) seem to indicate children in this sample's ability to be self-efficacious and act in accordance with their own values and beliefs. Most notably is that, even though children in the sample sought information from others, several held beliefs that were distinct from even their parents. Parents do shape children's beliefs and behaviors, especially early in childhood (Chouinard et al., 2007; Goodnow, 2005). Within this study, I found that children in *both* early and middle childhood used combinations of curiosity, agency, and unique perspectives, so the children in this sample's statements seem to reflect the culmination of their knowledge from across sources as their unique perspectives.

COVID-19 Understanding

Regardless of whether they endorsed COVID-19 as a health crisis, children in this study did understand what COVID-19 was and recognized that the virus created a big change in the world. Although an in-depth analysis of developmental trajectories in children's scientific reasoning was beyond the scope of this paper, children in this sample generally understood what COVID-19 was and how it spread from person to person (Bonoti et al., 2021; Idoiaga et al., 2020). Older children tended to be able to describe the virus with greater complexity than the younger children. I saw initial support for the claim that children may move from describing the virus in mythical terms to relying more heavily on their biological knowledge (Bonoti et al., 2022) as they move through middle childhood and into adolescence.

Affective Responses

Globally, adults showed substantial concern for children's mental well-being over the course of the pandemic. Indeed, most researchers focused on risks for increased anxiety and depression symptomology, with some studies examining mental health outcomes more generally (for review, see Samji et al., 2022). Children's expressions of those mental health symptomology may manifest as a sadness, fear of illness, and challenges with online school (Gallego et al., 2023; Thompson et al., 2021). In this sample, the children's affective responses to the pandemic were in line with the mixed socio-emotional impacts of COVID-19 on children and families found internationally (Montreuil et al., 2022; Samji et al., 2022). For example, like Canadian children (ages 5-14) early in the pandemic, children in this study also struggled with feeling disconnected from their peers and potentially missing out on important opportunities to grow socially (Larivière-Bastien et al., 2022). The children in the present study noted similar themes as they discussed missing friends, fear of illness, difficulties with online school, and distaste for certain aspects of safety measures. Nevertheless, in their retrospective accounts these were very much balanced by a surprising number of positives.

Both spontaneously and when prompted, children discussed positive experiences from the pandemic in their interviews. They enjoyed that the pace of life had slowed, they appreciated getting to spend time with family, they voiced pleasure in having more opportunities to play and had both appreciation and concern regarding the differences in how time in school was constructed. These findings align with results from Ashworth et al. (2022) who note that for UK adolescents "ordinary magic" included positive relationships and experiences. Moreover, individuals with those positive experiences, in conjunction with optimism and framing the pandemic as an opportunity for good things to happen, experienced better mental health

outcomes than those who were less positive about experiences during COVID-19 (Ashworth et al., 2022; Stanicke et al., 2023; Tamarit et al., 2023).

Children in the sample's spontaneous mentioning of positive experiences indicated that, even without interviewer prompting, they seemed to be utilizing a growth framework for event processing. This suggests promising initial evidence for children's ability to recontextualize the pandemic as something generative, which could promote well-being over a longer-term period (Pascal & Bertram, 2021; Ryff & Singer, 2008). Moreover, the juxtaposition of negative and positive affect at the same time mirrors a redemptive framework and highlights the potential for personal growth (Flatt et al., 2023; Gluck et al., 2019). Reframing especially negative events as eventually positive or as opportunities for growth (i.e., redemption) is associated with psychological well-being (Adler & Poulin, 2009; Guo et al., 2016; McAdams et al., 2001). A key example of a dialectic experience that arose for several children was online schooling. On the one hand, children in this study found the lack of organization and the isolation challenging. One child even went so far as to note they felt as though they'd lost a year of school to the pandemic; however, while acknowledging some of the negatives, many children in the study reframed online school as an opportunity to connect with family, be more relaxed, and engage with classmates in new ways. Thinking retrospectively, if children can continue to reminisce about their negative experiences, contextualize them, and grow from them, they may have greater well-being moving forward, and particularly in facing other challenges in their future (Flatt et al., 2023; Freeman et al., 2023). Given the vested interest in promoting children's positive psychosocial adjustment in the years to come (Able & Lattal, 2001; Freeman et al., 2023), researchers and practitioners should continue to encourage children to talk about their challenging experiences.

Notably, I did not find that children discussed where or how they sought emotional support. Emotional support plays a critical role in minimizing children's externalizing behaviors over time (McCarty et al., 2005). Past literature suggests that children turn to parents to make sense of lived experiences and understand their own emotions (Fivush et al., 2008). During the pandemic, Bate et al. (2021) found that parents' emotional health was related to their children's (age 6-12) emotional and behavioral health. Based on parents' reports, parental mediation of COVID-19 news for their children (ages 6-13) impacted children's emotion regulation (Morelli et al., 2022). Therefore, it seems that families were jointly processing the emotions they were feeling. It may be that our study's participants didn't include discussions of emotional support, not because it wasn't important but because the structure of the interview prioritized children's discussions of their scientific and pragmatic learning and their social decision making. Affect was instead included as an elaboration of other features rather than as the feature itself.

Values

Implicit across the different coding categories we used, in this study, children's rich responses provided a clear sense of their values throughout the pandemic. The children highlighted key changes since the advent of the pandemic and they expressed the importance of protection, social connectedness, control and personal agency, and accountability. These values are in close alignment with the extant research on children's early pandemic values (Alamrawy et al., 2021; Thompson et al., 2021). The children in this sample demonstrated how their perspectives on each value were intertwined with their affective responses. For example, this study corroborates children's perspectives on the positive changes during COVID-19 (Gadermann et al., 2021; Koller et al., 2022; Mantovani et al., 2021; Senkal et al., 2023; Singh et

al., 2020). Although COVID-19 brought forth negative emotions and fears in adults for the possible long-term losses in children's learning, well-being, and social development, international coherence on children's values through the pandemic suggest that children may have also seen stay-at-home orders as a time to increase family connection, autonomy, and personal development and not solely as a time of loss.

Children across studies including the present investigation seemed interested in creating adaptive ways of maintaining their personal relationships (Cauberghe et al., 2021; Christner et al., 2021; Ellis et al., 2020; Graber et al., 2023). Parents of children (ages 3-10) reported via an online survey that maintaining social relationships with friends and family was a primary concern for their families (Christner et al., 2021). Children in the present study also noticed the changes, both challenging and beneficial, in socialization and play. Their statements align with a visual and text analysis from Graber et al. (2023) in the United Kingdom who found that children ages 3 to 10 understood that although play had changed it had not stopped. Longitudinal evidence revealed that children ages 7 to 10 who maintained some in-person socialization through the pandemic were less likely to develop internalizing symptoms than their peers with less in-person socialization (Rodman et al., 2024). Children ages 9 to 13 and adolescents ages 14 to 16 in two studies sought to maintain social supports online; although online support during COVID-19 was recommended as a way to maintain relationships (Ellis et al., 2020), finding comfort online seemed to be less effective than in-person socialization (Cauberghe et al., 2021; Ellis et al., 2020). Social supports, such as video calls, may play a better role in maintaining relationships than other tools like social media (Ellis et al., 2020). Moving forward, researchers should consider what technology children tend to use, how it's used for social connectedness, and the impact of its use on social and emotional well-being.

Children in this study were invited to discuss control in a way that was above and beyond the literature found for similar populations. Past literature for adults suggests that feeling out of control can lead to higher endorsements of pseudoscientific beliefs (Srol et al., 2021) and relates to anxiety (Banerjee et al., 2022). Although the children we interviewed noted that some things were *beyond* their control, they did not seem particularly distressed by a lack of control. Instead, they recognized that they were primarily responsible for themselves and their own actions. Moreover, children across ages within this study expressed control beliefs, which tends to be above and beyond what researchers would expect for children in early childhood.

Most recognized that, although people can do their best to stay safe, ultimately COVID-19 is a virus and getting sick is beyond personal control. Coupled with that, however, many of the children in this sample also acknowledged that different populations had different risks for contracting COVID-19 and recognized the importance of taking safety precautions because of the threat of illness or death to others. These findings confirm findings from the UK that children (ages 7-18) and young adults (ages 18-25) felt a sense of social responsibility and wanted to do what they could to help keep others safe (Strommer et al., 2022; Thompson et al., 2021). Children in this sample valued both protecting others and moments of prosociality. Through the codes together, it seems that the pandemic may have brought forth children's concern and compassion for others.

Indications of Changes in Cohort Perspectives

Children may be experiencing changes in their worldviews compared to children growing up in earlier cohorts that did not experience COVID-19 (Benner & Mistry, 2020). Within this study, children's reports might involve a shift between how children growing up in the 1980s

through 2010s and children in this sample approach person-to-person interactions. The code we found of *stranger danger*, although utilized by relatively few participants, exposes a possible shift in children's conceptualizations of what it means to be "safe." Since the 1980s, public messaging campaigns have perpetuated the idea that interactions with strangers could lead to immense harm (e.g., kidnapping, murder; Wodda, 2018). Now, children who have grown up through COVID-19 may be more wary of the potential health risks of contact with people they do not know (i.e., strangers have germs I can't know about). Although explicitly recognized through stranger danger, an increased fear of strangers and/or illness also emerges through moral judgements. Implicitly, when children assert that someone with COVID-19 didn't do anything wrong because they could have been with others who had COVID-19 and did know, they put the onus of illness on others as carriers and potential threats. As we continue to move beyond the pandemic, it may be important to investigate how the COVID-19 cohort views and responds to new people as it could have implications for their social well-being. Additionally, two of the most recalled safety measures were quarantining and social distancing, which may indicate that physical space from others was at the forefront of children's thinking. Thus, public responses to the pandemic may have unintentionally instilled a wariness of others in school-aged children from the COVID-19 cohort.

Children in the sample seem to be navigating the world with a more nuanced understanding of science and the world. This is revealed with children's statements that included concepts that COVID-19 is tricky, some things in life are not controllable, and the importance of accountability, and which also revealed dialectic thinking about control and morality; all of these concepts and reasoning practices were found in narratives from both younger and older children. Prior research on cognition suggests that understanding risk and control develops exponentially

around age 10. So, although I would expect these themes to emerge for the participants in this study who were in middle childhood, young children's engagement with them, too, suggests that at least some children are moving into middle childhood with a much more nuanced idea about science, risk, control, and personal agency. For example, although prior research suggests that children as young as four can provide some intuitive descriptions of illness, children don't typically begin sharing more scientific, causal inferences until closer to age seven (Leotti et al., 2021). Children may be able to develop causal reasoning earlier with support from informal learning (Bonawitz et al., 2012). The pandemic offered both need and opportunity for informal scientific learning. Given their context, children seemed to reflect this theorized ability with earlier nuance in complex understanding.

This nuanced understanding of science and the world seems to align with children in this study's autonomy in directing their own course and the course of others in their immediate circles. Although children often looked to the adults around them for information, they did not universally agree with the decisions they were making and sometimes differed from parents, siblings, or peers in the actions they took.

Practical Implications

Supporting children moving forward likely requires active participation from parents and children. The interactions children have with parents can serve to increase or decrease children's skill with emotion regulation, which is essential for social and emotional well-being (Morris et al., 2017). Parents report wanting to teach children how to handle emotions "the right way" (Dunbar et al., 2022), and they do so through modeling, their reactions to their children's behavior, discussion, and selection of appropriate niches for their children (Eisenberg et al.,

1998). Parental availability for COVID-19 conversations and emotion coaching buffer the relationship between exposure to COVID-19 stressful events and children's subsequent symptomatology (Cohodes et al., 2021; Di Giunta et al., 2021). Although families may no longer be discussing the significant daily changes that resulted from COVID-19, reminiscing about the pandemic may still be an important feature of recovery now, through adolescence, and into adulthood (Baker-Ward et al., 2009; Salmon, 2021).

Researchers, practitioners, and policymakers should aim to maintain the strides which scientists have made in listening to and honoring children's perspectives on their needs, health, and well-being. Early in the pandemic, researchers stated that public messaging should be rapid and accurate, build credibility and trust, and showcase empathy (Basseal et al., 2022; Brooks et al., 2020; Sauer et al., 2021). The cohort of children growing up through the pandemic emphasized this through expressions of their communication needs (Bray et al., 2021; Pascal & Bertram, 2021; Strommer et al., 2022), their desire to be involved in the research process (Jenkins et al., 2022), and their autonomy in and commitment to participating in crisis response measures (Probst et al., 2023; Strommer et al., 2022). They understood what the pandemic is and the changes it brought about (Christidou et al., 2022; Jenkins et al., 2022). And yet, they also noted a lack of trust in the government's response to COVID-19 (Strommer et al., 2022). Children in this study were no different, sharing their knowledge of safety measures, nominating their curiosities, their beliefs about the protection of self and others, providing moral assessments on contracting COVID-19, and asserting their personal agency in preventing illness. Children may be more autonomous than adults expect (Stanicke et al., 2023). We can work to honor children's openness and expertise through additional child-directed research and practice (Jenkins et al., 2022; Randall & Hallowell, 2012).

Limitations and Future Directions

I recognize that, in isolation, the generalizability of my findings may be limited. Although the sample demographically aligned with other recent explorations on COVID-19 within the United States and meets extant calls for population-specific research (Khubchandani et al., 2021), the children interviewed were primarily European American, were middle to upper-middle class, and had well-educated parents. Even within this cohort, parents reported that the pandemic was stressful and disruptive. Nevertheless, because this subset of Americans tends to be overrepresented in psychological research, I encourage future researchers to continue to investigate children's experiences with a critical eye to the multi-systemic influences on their development (Bronfenbrenner, 1977). This could be achieved through specific attention to children's setting (e.g., schools, home) and how those institutions attend to enduring cohort-level shifts in children's perspectives.

The study was initially designed to capture children's knowledge of pandemic safety measures and virology, which created both strengths and limitations. The design was a strength because, within the non-leading, open-ended structure, we were able to assess what children spontaneously valued when primed to think about pandemic safety. The design's focus on only knowledge presented a limitation in that I was not able to fully represent what children's pandemic-related emotions were (e.g., anger, sadness, joy) or to whom children turned for emotional support, nor was I able to examine emotional well-being as an outcome. Future research might benefit from including similarly structured questions to those we used but with the inclusion of emotion-based prompts.

These data represent a single point in time, during which pandemic safety protocols had been in place for an extended period. Unlike other studies that collected data when the pandemic was in its infancy, I had the opportunity to evaluate children's established perspectives; however, I am unable to draw conclusions about the development that led to the perspectives that children offered us or to continue to understand the cascades in children's development. With that in mind, these data are unique in that they capture children's perspectives about 12 to 24 months after early pandemic researchers' data were collected. Because of this, I had the opportunity to see many similarities and some differences between what children were feeling and thinking early on and what children were thinking and feeling as the pandemic endured. Through these analyses, I see an opportunity for longitudinal work that could highlight continuity in different samples from different places across chronological time. If possible, future meta-analyses should connect discrete moments from within the pandemic with one another. Looking beyond the pandemic, researchers can continue to evaluate children's trajectories through longitudinal analysis (e.g., Shoychet et al., 2023). Lastly, I would encourage researchers to continue investigating children's meaning making as children move from living in the pandemic to integrating that period of their personal histories into their life stories. Meaning making happens both independently and in collaboration with others and have implications for well-being (Fivush et al., 2008), so effectively helping children navigate that process could lead to better long-term outcomes. Because the impacts of COVID-19 are likely to cascade into long-term changes in behavior, well-being, and development, continued attention to the COVID-19 cohort can offer insights into the mechanisms of sociohistorical change.

Although I was unable to capture development across time points, I did initially introduce a code to capture the sample's time perspectives of the pandemic when interviewed. Their

perceptions of timeframe were complex. They swapped between present and past tenses, sometimes depending on the nature of the story they were sharing and sometimes reflecting their broader perspectives on where in the pandemic they were situated at the time of the interview. Because of the muddled complexities of tense use, its narrative function, and of children's explicit time statements within the current code, I could not derive clear insights about children's time perspectives or the possible relationships between time perspectives and other themes. Perception of time since an event occurred impacts recovery, meaning making, and ultimately identity development (Benner & Mistry, 2020; Lachnit et al., 2020; Miyagawa & Taniguchi, 2020), so it is important to understand when in children's personal pasts they believe the pandemic was. I recommend that other researchers include measures on time perspective and attend to how time intersects with recovery from the pandemic.

Conclusion

Overall, this work offers a look at the pandemic through the uniquely formed perspectives of children in early and middle childhood. Children in this study gathered information about the pandemic and how to negotiate pandemic life from conversations, personal experiences, and even their own independent research. They made sense of pandemic-related changes in their lives through thoughtful and dynamic reasoning processes. Their responses emphasized the dialectic nature of the good and bad that emerged in their lives as a result of COVID-19. Although participants in the study were as young as five years old, they had formed sophisticated understandings of what the pandemic was, including scientific knowledge and developing abilities with risk assessment. Moreover, these children took both themselves and their contexts into consideration when making decisions about safety for themselves and others.

The pandemic elucidated their strong values for protection, social connectedness, personal control and agency, and accountability. By assessing what these children felt, what they knew about science and the pandemic, and how they reasoned through novel and challenging scenarios, I hope to have created research that serves children as they are now *and* that will serve the people they will come to be (Jorgensen et al., 2022; Pereira et al., 2014).

REFERENCES

- Abel, T., and Lattal, K. M. (2001). Molecular mechanisms of memory acquisition, consolidation and retrieval. *Current Opinions in Neurobiology*, 11, 180–187.
[https://doi.org/10.1016/S0959-4388\(00\)00194-X](https://doi.org/10.1016/S0959-4388(00)00194-X)
- Adler, J. M., & Poulin, M. J. (2009). The political is personal: Narrating 9/11 and psychological well-being. *Journal of Personality*, 77(4), 903–932. <https://doi.org/10.1111/j.1467-6494.2009.00569.x>
- Alamrawy, R. G., Fadl, N., & Khaled, A. (2021). Psychiatric morbidity and dietary habits during COVID-19 pandemic: A cross-sectional study among Egyptian youth (14–24 years). *Middle East Current Psychiatry (Cairo)*, 28(1), 1-10. <https://doi.org/10.1186/s43045-021-00085-w>
- Almeida, D. M., & Wong, J. D. (2009). Life transitions and daily stress processes. In G. H. Elder, Jr. & J. Z. Giele (Eds.), *The craft of life course research* (pp. 141–162). The Guilford Press.
- Araújo, L. A. d., Veloso, C. F., Souza, M. d. C., Azevedo, João Marcos Coelho de, & Tarro, G. (2021). The potential impact of the COVID-19 pandemic on child growth and development: A systematic review. *Jornal De Pediatria*, 97(4), 369-377. <https://doi.org/10.1016/j.jped.2020.08.008>
- Ardelt, M. (2005). How wise people cope with crises and obstacles in life. *ReVision (Cambridge, Mass.)*, 28(1), 7-19. <https://doi.org/10.3200/REVN.28.1.7-19>
- Ashworth, E., Putwain, D. W., McLoughlin, S., Saini, P., Chopra, J., Rosser, B., & Eames, C. (2022). Ordinary magic in extraordinary circumstances: Factors associated with positive

- mental health outcomes for early adolescents during the COVID-19 pandemic. *Adversity and Resilience Science*, 3(1), 65-79. <https://doi.org/10.1007/s42844-022-00054-0>
- Assistant Secretary for Public Affairs (ASPA). (2023, December 15). *Covid-19 public health emergency*. HHS.gov. <https://www.hhs.gov/coronavirus/covid-19-public-health-emergency/index.html#:~:text=The%20federal%20Public%20Health%20Emergency,remains%20a%20public%20health%20priority.>
- Baker-Ward, L., Ornstein, P. A., & Taylor, T. E. (2021). *Children's memory for forensically relevant experiences*. In *Handbook of Children in the Legal System*. Routledge.
- Baker-Ward, L., Ornstein, P. A., & Starnes, L. P. (2009). Children's understanding and remembering of stressful experiences. In J. Quas & R. Fivush (Eds.), *Emotion and Memory in Development: Biological, Cognitive and Social Considerations*. Series in Affective Science (pp. 28-59). New York: Oxford University Press.
- Ball, E. (1998). *Slaves in the family*. New York: Farrar, Straus and Giroux.
- Baltes, P. B., Lindenberger, U., & Staudinger, U. M. (2006). Life Span Theory in Developmental Psychology. In R. M. Lerner & W. Damon (Eds.), *Handbook of child psychology: Theoretical models of human development.*, Vol. 1, 6th ed. (pp. 569–664). John Wiley & Sons Inc.
- Banerjee, A., Sheth, H., Agarwal, A., & Chakraborty, A. (2022). Relationship between COVID-19 anxiety, locus of control and psychological well-being. *Indian Journal of Health and Wellbeing*, 13(2), 218-223.
- Basseal, J., Bennett, C., Collignon, P., Currie, B., Durrheim, D., Leask, J., McBryde, E., McIntyre, P., Russell, F., Smith, D., Sorrell, T., & Marais, B. (2023). Key lessons from

- the COVID-19 public health response in australia. *The Lancet Regional Health. Western Pacific*, 30, 100616-100616. <https://doi.org/10.1016/j.lanwpc.2022.100616>
- Bate, J., Pham, P. T., & Borelli, J. L. (2021). Be my safe haven: Parent–Child relationships and emotional health during COVID-19. *Journal of Pediatric Psychology*, 46(6), 624-634. <https://doi.org/10.1093/jpepsy/jsab046>
- Bauer, P. J., Cronin-Golomb, L. M., Porter, B. M., Jaganjac, A., & Miller, H. E. (2021). Integration of memory content in adults and children: Developmental differences in task conditions and functional consequences. *Journal of Experimental Psychology. General*, 150(7), 1259-1278. <https://doi.org/10.1037/xge0000996>
- Benner, A. D., & Mistry, R. S. (2020). Child development during the COVID-19 pandemic through a life course theory lens. *Child Development Perspectives*, 14(4), 236-243. <https://doi.org/10.1111/cdep.12387>
- Bluck, S., Alea, N., Habermas, T., & Rubin, D. C. (2005). A TALE of three functions: The self-reported uses of autobiographical memory. *Social Cognition*, 23(1), 91–117. <https://doi.org/10/b2qpr6>
- Bonawitz, E., Fischer, A., & Schulz, L. (2012). Teaching 3.5-year-olds to revise their beliefs given ambiguous evidence. *Journal of Cognition and Development*, 13(2), 266-280. <https://doi.org/10.1080/15248372.2011.577701>
- Bonoti, F., Christidou, V., & Papadopoulou, P. (2022). Children’s conceptions of coronavirus. *Public Understanding of Science (Bristol, England)*, 31(1), 35-52. <https://doi.org/10.1177/09636625211049643>
- Braunack-Mayer, A., Tooher, R., Collins, J. E., Street, J. M., & Marshall, H. (2013). Understanding the school community's response to school closures during the H1N1

- 2009 influenza pandemic. *BMC Public Health*, 13(1), 344-344. <https://doi.org/10.1186/1471-2458-13-344>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 57–71). American Psychological Association. <https://doi.org/10.1037/13620-004>
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597. <https://doi.org/10.1080/2159676X.2019.1628806>
- Bray, L., Carter, B., Blake, L., Saron, H., Kirton, J. A., Robichaud, F., Avila, M., Ford, K., Nafria, B., Forsner, M., Nilsson, S., Chelkowski, A., Middleton, A., Rullander, A., Mattsson, J., & Protheroe, J. (2021). "people play it down and tell me it can't kill people, but I know people are dying each day". children's health literacy relating to a global pandemic (COVID-19); an international cross sectional study. *PloS One*, 16(2), e0246405-e0246405. <https://doi.org/10.1371/journal.pone.0246405>
- Brodie, N., Perdomo, J. E., & Silberholz, E. A. (2021). The dual pandemics of COVID-19 and racism: Impact on early childhood development and implications for physicians. *Current Opinion in Pediatrics*, 33(1), 159. <https://doi.org/10.1097/MOP.0000000000000985>
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *The American Psychologist*, 32(7), 513-531. <https://doi.org/10.1037/0003-066X.32.7.513>

- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet*, 395(10227), 912-920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)
- Bruner, J. S. (1957). On perceptual readiness. *Psychological Review*, 64(2), 123-152. <https://doi.org/10.1037/h0043805>
- Cantor, P., Osher, D., Berg, J., Steyer, L., & Rose, T. (2019). Malleability, plasticity, and individuality: How children learn and develop in context. *Applied Developmental Science*, 23(4), 307. <https://doi.org/10.1080/10888691.2017.1398649>
- Capurso, M., & Ragni, B. (2016). Bridge over troubled water: Perspective connections between coping and play in children. *Frontiers in Psychology*, 7(1953). <https://doi.org/10.3389/fpsyg.2016.01953>
- Cauberghe, V., De Jans, S., Hudders, L., & Vanwesenbeeck, I. (2022). Children's resilience during Covid-19 confinement. A child's perspective—Which general and media coping strategies are useful? *Journal of Community Psychology*, 50(3), 1503-1520. <https://doi.org/10.1002/jcop.22729>
- Ceci, S. J., & Bruck, M. (1993). Suggestibility of the child witness: A historical review and synthesis. *Psychological Bulletin*, 113(3), 403-439. <https://doi.org/10.1037/0033-2909.113.3.403>
- Chesson, R., Harding, L., Hart, C., & O'Loughlin, V. (1997). Do parents and children have common perceptions of admission, treatment and outcome in a child psychiatric unit? *Clinical Child Psychology and Psychiatry*, 2(2), 251-270. <https://doi.org/10.1177/1359104597022006>

- Chiotos, K., & Fitzgerald, J. C. (2023). COVID-19 in Children—Learning from the past, planning for the future. *JAMA Pediatrics*, 177(9), 885. <https://doi.org/10.1001/jamapediatrics.2023.2354>
- Chouinard, M. M., Harris, P. L., & Maratsos, M. P. (2007). Children's Questions: A Mechanism for Cognitive Development. *Monographs of the Society for Research in Child Development*, 72(1), 1–129. <http://www.jstor.org/stable/30163594>
- Christidou, V., Bonoti, F., Papadopoulou, P., Hatzinikita, V., & Doumpala, P. (2022). Children's views of SARS-COV-2 and COVID-19 preventive practices: Comparing verbal and visual empirical evidence. *Frontiers in Education*, 7. <https://doi.org/10.3389/feduc.2022.917442>
- Christner, N., Essler, S., Hazzam, A., & Paulus, M. (2021). Children's psychological well-being and problem behavior during the COVID-19 pandemic: An online study during the lockdown period in Germany. *PloS One*, 16(6), e0253473-e0253473. <https://doi.org/10.1371/journal.pone.0253473>
- Clark, M. S., Aragon, O. R., & Hirsch, J. L. (2015). *Social relationships in adulthood* (Second ed.). Elsevier Ltd. <https://doi.org/10.1016/B978-0-08-097086-8.34026-0>
- Cohodes, E. M., McCauley, S., & Gee, D. G. (2021). Parental buffering of stress in the time of COVID-19: Family-level factors May Moderate the association between pandemic-related stress and youth symptomatology. *Journal of Abnormal Child Psychology*, 49(7), 935-948. <https://doi.org/10.1007/s10802-020-00732-6>
- Cole, D. A. (1991). Preliminary support for a competency-based model of depression in children. *Journal of Abnormal Psychology* (1965), 100(2), 181-190. <https://doi.org/10.1037/0021-843X.100.2.181>

- Consolazio, D., Terraneo, M., & Tognetti, M. (2021). Social cohesion, psycho-physical well-being and self-efficacy of school-aged children in lombardy: Results from HBSC study. *Health & Social Care in the Community*, 29(6), 1729-1737.
<https://doi.org/10.1111/hsc.13278>
- Cook, O. K. (2023). *Effects of home-, school-, and individual-level factors on Children's deliberate memory development in elementary school*
- Cornell, S., Ayre, J., Mac, O., Kapoor, R., Pickles, K., Batcup, C., Dolan, H., Bonner, C., Cvejic, E., Mouwad, D., Zacharia, D., Tularic, U., Santalucia, Y., Chen, T. T., Basic, G., McCaffery, K., & Muscat, D. (2022). Collateral positives of COVID-19 for culturally and linguistically diverse communities in western Sydney, Australia. *PloS One*, 17(12), e0278923-e0278923. <https://doi.org/10.1371/journal.pone.0278923>
- Dearn, J., Thomas, K., & Oron, A. P. (2017). Variations in practices to prepare children and families for pediatric urodynamic examinations: A national survey. *Urologic Nursing*, 37(5), 243-250. <https://doi.org/10.7257/1053-816X.2017.37.5.243>
- Dedoose Version 9.0.17, cloud application for managing, analyzing, and presenting qualitative and mixed method research data (2021). Los Angeles, CA: SocioCultural Research Consultants, LLC www.dedoose.com.
- Diamond, A. (2013). Executive functions. *Annual Review of Psychology*, 64(1), 135-168. <https://doi.org/10.1146/annurev-psych-113011-143750>
- Diamond, J. B. (2018). Race and White supremacy in the sociology of education: Shifting the intellectual gaze. In J. Mehta & S. Davies (Eds.), *Education in a new society: Renewing the sociology of education* (pp. 345–362). University of Chicago Press.

- Di Giunta, L., Lunetti, C., Fiasconaro, I., Gliozzo, G., Salvo, G., Ottaviani, C., Aringolo, K., Comitale, C., Riccioni, C., & D'Angeli, G. (2021). COVID-19 impact on parental emotion socialization and youth socioemotional adjustment in Italy. *Journal of Research on Adolescence*, 31(3), 657-677. <https://doi.org/10.1111/jora.12669>
- Dou, K., Wang, Y., -Bin, J. L., & Liu, Y.-Z. (2016). Core self-evaluation, regulatory emotional self-efficacy, and depressive symptoms: Testing two mediation models. *Social Behavior and Personality: An International Journal*, 44(3), 391-399. <https://doi.org/10.2224/sbp.2016.44.3.391>
- Dunbar, A. S., Lozada, F. T., Ahn, L. H., & Leerkes, E. M. (2022). Mothers' preparation for bias and responses to children's distress predict positive adjustment among black children: An attachment perspective. *Attachment & Human Development*, 24(3), 287-303. <https://doi.org/10.1080/14616734.2021.1976922>
- Duong, J., & Bradshaw, C. P. (2017). Links between contexts and middle to late childhood Social-Emotional development. *American Journal of Community Psychology*, 60(3-4), 538-554. <https://doi.org/10.1002/ajcp.12201>
- Dvorsky, M. R., Breaux, R., & Becker, S. P. (2021). Finding ordinary magic in extraordinary times: Child and adolescent resilience during the COVID-19 pandemic. *European Child & Adolescent Psychiatry*, 30(11), 1829-1831. <https://doi.org/10.1007/s00787-020-01583-8>
- Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry*, 9(4), 241-273. https://doi.org/10.1207/s15327965pli0904_1
- Eisenberg, N., & Silver, R. C. (2011). Growing up in the shadow of terrorism: Youth in America after 9/11. *The American Psychologist*, 66(6), 468-481. <https://doi.org/10.1037/a0024619>

- Elder, G. H. (1998). The life course as developmental theory. *Child Development*, 69(1), 1-12. <https://doi.org/10.1111/j.1467-8624.1998.tb06128.x>
- Ellis, W. E., Dumas, T. M., & Forbes, L. M. (2020). Physically isolated but socially connected: Psychological adjustment and stress among adolescents during the initial COVID-19 crisis. *Canadian Journal of Behavioural Science*, 52(3), 177-187. <https://doi.org/10.1037/cbs0000215>
- Esposito, A. G., & Bauer, P. J. (2018). Building a knowledge base: Predicting self-derivation through integration in 6- to 10-year-olds. *Journal of Experimental Child Psychology*, 176, 55-72. <https://doi.org/10.1016/j.jecp.2018.07.011>
- Esposito, A. G., & Bauer, P. J. (2019). Self-derivation through memory integration under low surface similarity conditions: The case of multiple languages. *Journal of Experimental Child Psychology*, 187, 104661-104682. <https://doi.org/10.1016/j.jecp.2019.07.001>
- Evans, S., Mikocka-Walus, A., Klas, A., Olive, L., Sciberras, E., Karantzas, G., & Westrupp, E. M. (2020). From "it has stopped our lives" to "spending more time together has strengthened bonds": The varied experiences of Australian families during COVID-19. *Frontiers in Psychology*, 11, 588667-588667. <https://doi.org/10.3389/fpsyg.2020.588667>
- Fernández García, L., Merchán, A., Phillips-Silver, J., & Daza González, M. T. (2021). Neuropsychological development of cool and hot executive functions between 6 and 12 years of age: A systematic review. *Frontiers in Psychology*, 12, 687337-687337. <https://doi.org/10.3389/fpsyg.2021.687337>
- Fivush, R. (2011). The development of autobiographical memory. *Annual Review of Psychology*, 62, 559–582. <https://doi.org/10.1146/annurev.psych.121208.131702>

- Fivush, R. (1998). Children's recollections of traumatic and nontraumatic events. *Development and Psychopathology*, 10(4), 699-716. <https://doi.org/10.1017/S0954579498001825>
- Fivush, R., McDermott Sales, J., & Bohanek, J. G. (2008). Meaning making in mothers' and children's narratives of emotional events. *Memory (Hove)*, 16(6), 579-594. <https://doi.org/10.1080/09658210802150681>
- Flatt, E. N., Fivush, R., & Booker, J. A. (2023). Self-event connections, good storytelling, and the good life: Evidence of cultural norms and individual differences in young adults' narratives of life challenges. *Merrill-Palmer Quarterly*. [Accepted]
- Flavell, J. H. (1985). Cognitive development (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Gadernann, A. C., Thomson, K. C., Richardson, C. G., Gagné, M., McAuliffe, C., Hirani, S., & Jenkins, E. (2021). Examining the impacts of the COVID-19 pandemic on family mental health in Canada: Findings from a national cross-sectional study. *BMJ Open*, 11(1), e042871.
- Gabard-Durnam, L. J., Flannery, J., Goff, B., Gee, D. G., Humphreys, K. L., Telzer, E., Hare, T., & Tottenham, N. (2014). The development of human amygdala functional connectivity at rest from 4 to 23 years: A cross-sectional study. *NeuroImage (Orlando, Fla.)*, 95, 193-207. <https://doi.org/10.1016/j.neuroimage.2014.03.038>
- Gallego, G., Cardona, B., & Scholz, B. (2023). Using photovoice to explore bolivian children's experiences of COVID-19. *Health Promotion International*, 38(2). <https://doi.org/10.1093/heapro/daad033>
- Gershoff, E. T., Aber, J. L., Ware, A., & Kotler, J. A. (2010). Exposure to 9/11 among youth and their mothers in new york city: Enduring associations with mental health and

- sociopolitical attitudes: Youth's and mothers' exposure to 9/11. *Child Development*, 81, 1142-1160. <https://doi.org/10.1111/j.1467-8624.2010.01459.x>
- Geyton, T. A., Town, M., Hunte, R., & Johnson, N. (2023). Magnifying inequality: How black women found safety in the midst of dual pandemics. *Journal of Social Issues*, 79(2), 716-734. <https://doi.org/10.1111/josi.12565>
- Gimenez-Dasi, M., Quintanilla, L., Lucas-Molina, B., & Sarmento-Henrique, R. (2020). Six weeks of confinement: Psychological effects on a sample of children in early childhood and primary education. *Frontiers in Psychology*, 11, 590463-590463. <https://doi.org/10.3389/fpsyg.2020.590463>
- Glaser, Barney G. and Anselm L. Strauss. 1967. *The Discovery of Grounded Theory*. Chicago: Aldine.
- Glück, J., Bluck, S., & Weststrate, N. M. (2019). More on the MORE life experience model: What we have learned (so far). *The Journal of Value Inquiry*, 53(3), 349-370. <https://doi.org/10.1007/s10790-018-9661-x>
- Goldfeld, S., O'Connor, E., Sung, V., Roberts, G., Wake, M., West, S., & Hiscock, H. (2022). Potential indirect impacts of the COVID-19 pandemic on children: A narrative review using a community child health lens. *Medical Journal of Australia*, 216(7), 364-372. <https://doi.org/10.5694/mja2.51368>
- Goodnow, J. J. (2005). Family socialization: New moves and next steps. *New Directions for Child and Adolescent Development*, 2005(109), 83-90. <https://doi.org/10.1002/cd.140>
- Graber, K., O'Farrelly, C., & Ramchandani, P. (2024). Children's perspectives on their play experiences during the COVID-19 pandemic: A video-based interview study. *Children & Society*, 38(2), 673-693. <https://doi.org/10.1111/chso.12756>

- Green, B. L., Grace, M. C., Vary, M. G., Kramer, T. L., Gleser, G. C., & Leonard, A. C. (1994). Children of disaster in the second decade: A 17-year follow-up of buffalo creek survivors. *Journal of the American Academy of Child and Adolescent Psychiatry*, 33(1), 71. <https://doi.org/10.1097/00004583-199401000-00011>
- Greenhow, C., Lewin, C., & Staudt Willet, K. B. (2021). The educational response to covid-19 across two countries: A critical examination of initial digital pedagogy adoption. *Technology, Pedagogy and Education*, 30(1), 7-25. <https://doi.org/10.1080/1475939X.2020.1866654>
- Guo, J., Klevan, M., & McAdams, D. P. (2016). Personality traits, ego development, and the redemptive self. *Personality and Social Psychology Bulletin*, 42, 1551–1563. <https://doi.org/10.1177/0146167216665093>
- Habermas, T., Negele, A., & Mayer, F. B. (2010). “Honey, you’re jumping about”—Mothers’ scaffolding of their children's and adolescents’ life narration. *Cognitive Development*, 25(4), 339-351. <https://doi.org/10.1016/j.cogdev.2010.08.004>
- Halberstadt, A. G., Langley, H.A., Hussong, A. M., Coffman, J. L., Rothenberg, W. A., Mokrova, I., & Costanzo, P. R. (2016). Parents’ understanding of gratitude in young children: A thematic analysis. *Early Childhood Research Quarterly*, 36, 439-451. <https://doi.org/10.1016/j.ecresq.2016.01.014>
- Heard-Garris, N., Davis, M. M., Szilagyi, M., & Kan, K. (2018). Childhood adversity and parent perceptions of child resilience. *BMC Pediatrics*, 18(1), 204-204. <https://doi.org/10.1186/s12887-018-1170-3>

- Heljakka, K. (2021). Liberated through teddy bears: Resistance, resourcefulness, and resilience in toy play during the COVID-19 pandemic. *International Journal of Play*, 10(4), 387–404. <https://doi.org/10.1080/21594937.2021.2005402>
- Hennink, M., & Kaiser, B. N. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Social Science & Medicine (1982)*, 292, 114523–114523. <https://doi.org/10.1016/j.socscimed.2021.114523>
- Horn, S. R., Charney, D. S., & Feder, A. (2016). Understanding resilience: New approaches for preventing and treating PTSD. *Experimental Neurology*, 284(Pt B), 119–132. <https://doi.org/10.1016/j.expneurol.2016.07.002>
- Hotez, E., Perrigo, J. L., Bigsby, M., Mixson, L. S., Stanley, L., & Halfon, N. (2024). A descriptive study of well-being and assets in middle childhood during the COVID-19 pandemic in a los angeles county school district. *Child Indicators Research*, 17(2), 869–899. <https://doi.org/10.1007/s12187-023-10098-y>
- Hughes, S. A., Sun, W., Garner, P. W., Legette, K. B., & Halberstadt, A. G. (2023). Context matters as racialization evolves: Exploring bias in preservice teacher responses to children. *American Educational Research Journal*, 60(6), 1258–1300. <https://doi.org/10.3102/00028312231200016>
- Idoiaga, N., Berasategi, N., Eiguren, A., & Picaza, M. (2020). Exploring children's social and emotional representations of the COVID-19 pandemic. *Frontiers in Psychology*, 11, 1952–1952. <https://doi.org/10.3389/fpsyg.2020.01952>
- Irwin, M., Lazarevic, B., Soled, D., & Adesman, A. (2022). The COVID-19 pandemic and its potential enduring impact on children. *Current Opinion in Pediatrics*, 34(1), 107. <https://doi.org/10.1097/MOP.0000000000001097>

- Jenkins, C. L., Sykes, S., & Wills, J. (2022). Public libraries as supportive environments for children's development of critical health literacy. *International Journal of Environmental Research and Public Health*, 19(19), 11896. <https://doi.org/10.3390/ijerph191911896>
- Jiao, W. Y., Wang, L. N., Liu, J., Fang, S. F., Jiao, F. Y., Pettoello-Mantovani, M., & Somekh, E. (2020). Behavioral and emotional disorders in children during the COVID-19 epidemic. *The Journal of Pediatrics*, 221, 264-266.e1. <https://doi.org/10.1016/j.jpeds.2020.03.013>
- Jones, J. M. (2021). The dual pandemics of COVID-19 and systemic racism: Navigating our path forward. *School Psychology*, 36(5), 427-431. <https://doi.org/10.1037/spq0000472>
- Jørgensen, E., Koller, D., Raman, S., Olatunya, O., Asemota, O., Ekpenyong, B. N., Gunnlaugsson, G., & Okolo, A. (2022). The voices of children and young people during COVID-19: A critical review of methods. *Acta Paediatrica*, 111(9), 1670-1681. <https://doi.org/10.1111/apa.16422>
- Karabacak-Çelik, A., & Aşantuğrul, N. (2024). The mediator role of positive experiences at school in the relationship between academic self-confidence and school belonging in turkish secondary school students. *Child Indicators Research*, 17(2), 683-704. <https://doi.org/10.1007/s12187-023-10101-6>
- Karakatsoulis, G. N., Adorjan, K., Ahmed, H. U., Berk, M., Bjedov, S., Bobes-Bascaran, T., Bourgin-Duchesnay, J., Abud, I. I. C., Cetkovich, M., Colon-Rivera, H., Crepin, P., De Berardis, D., De Lucena, D., Stefano, R. D., Dodd, S., Elissa, A., Erzin, G., Etchevers, M. J., Falkai, P., . . . Prezerakos, P. E. (2022). The effect of different degrees of lockdown and self-identified gender on anxiety, depression and suicidality during the COVID-19

- pandemic: Data from the international COMET-G study. *Psychiatry Research*, 315, 114702-114702. <https://doi.org/10.1016/j.psychres.2022.114702>
- Keane, K., & Evans, R. R. (2022). Exploring the relationship between modifiable protective factors and mental health issues among children experiencing adverse childhood experiences using a resilience framework. *Journal of Child & Adolescent Trauma*, 15(4), 987-998. <https://doi.org/10.1007/s40653-022-00471-4>
- Kelly, B. F., & Diskin-Holdaway, C. (2023). Bear in a window: Australian children's perspectives on lockdown and experiences of the COVID-19 pandemic. *Children & Society*, 37(1), 183-198. <https://doi.org/10.1111/chso.12667>
- Khubchandani, J., Sharma, S., Webb, F. J., Wiblishauser, M. J., & Bowman, S. L. (2021). Post-lockdown depression and anxiety in the USA during the COVID-19 pandemic. *Journal of Public Health*, 43(2), 246-253. <https://doi.org/10.1093/pubmed/fdaa250>
- Kim, J. J., Munroe, M., Feng, Z., Morris, S., Al-Refae, M., Antonacci, R., & Ferrari, M. (2021). Personal growth and well-being in the time of COVID: An exploratory mixed-methods analysis. *Frontiers in Psychology*, 12, 648060-648060. <https://doi.org/10.3389/fpsyg.2021.648060>
- Koller, D. (2021). Right of children to be heard. *BMJ Paediatrics Open*, 5(1), e001161. <https://doi.org/10.1136/bmjpo-2021-001161>
- Koller, D., Grossi, M., van den Heuvel, M., & Wong, P. (2022). Hiding and seeking: Children's lived experiences during COVID-19. *Children and Society*, 00, 1–18. <https://doi.org/10.1111/chso.12590>
- Kragh-Muller, G., & Gloeckler, L. R. (2010). What did you learn in school today?: The importance of socioemotional development-A comparison of U.S. and danish child

care. *Childhood Education*, 87(1), 53-

61. <https://doi.org/10.1080/00094056.2010.10521439>

Kujawa, A., Green, H., Compas, B. E., Dickey, L., & Pegg, S. (2020). Exposure to COVID-19 pandemic stress: Associations with depression and anxiety in emerging adults in the united states. *Depression and Anxiety*, 37(12), 1280-1288.

<https://doi.org/10.1002/da.23109>

Kyeremateng, R., Lynch, M. A., Pinzón-Segura, M. C., Osei-Bonsu, A., Fortmann, J., Wood, D., Koller, D., Jorgensen, E., Olatunya, O., Asemota, O., Raman, S., Gunnlaugsson, G., Zafar, N., Ekpenyong, B., Takeuchi, H., Okolo, A., Ndayambaje, A., Mesa, M. L., Sibomana, L., . . . International Society for Social Pediatrics (ISSOP) Voices of Children Working Group. (2022). What the children tell us: The COVID-19 pandemic and how the world should respond. *BMJ Paediatrics Open*, 6(1), e001481. <https://doi.org/10.1136/bmjpo-2022-001481>

Lachnit, I., Park, C. L., & George, L. S. (2020). Processing and resolving major life stressors: An examination of meaning-making strategies. *Cognitive Therapy and Research*, 44(5), 1015-1024. <https://doi.org/10.1007/s10608-020-10110-7>

Larivière-Bastien, D., Aubuchon, O., Blondin, A., Dupont, D., Libenstein, J., Séguin, F., Tremblay, A., Zarglayoun, H., Herba, C. M., & Beauchamp, M. H. (2022). Children's perspectives on friendships and socialization during the COVID-19 pandemic: A qualitative approach. *Child: Care, Health & Development*, 48(6), 1017-1030. <https://doi.org/10.1111/cch.12998>

- Larsen, L., Schaubert, S. K., Holt, T., & Helland, M. S. (2023). Longitudinal covid-19 effects on child mental health: Vulnerability and age dependent trajectories. *Child and Adolescent Psychiatry and Mental Health*, 17(1), 1-104. <https://doi.org/10.1186/s13034-023-00652-5>
- Leotti, L., Pochinki, N., Reis, D., Bonawitz, E., & LoBue, V. (2021). Learning about germs in a global pandemic: Children's knowledge and avoidance of contagious illness before and after COVID-19. *Cognitive Development*, 59, 101090. <https://doi.org/10.1016/j.cogdev.2021.101090>
- Leyva, D., Reese, E., Laible, D., Schaughency, E., Das, S., & Clifford, A. (2020). Measuring parents' elaborative reminiscing: Differential links of parents' elaboration to children's autobiographical memory and socioemotional skills. *Journal of Cognition and Development*, 21(1), 23–45. <https://doi.org/10.1080/15248372.2019.1668395>
- Liu, C. H., & Doan, S. N. (2020). Psychosocial stress contagion in children and families during the COVID-19 pandemic. *Clinical Pediatrics*. <https://doi.org/10.1177/0009922820927044>
- Maccoby, E. E. (1994). The role of parents in the socialization of children: An historical overview. In R. D. Parke, P. A. Ornstein, J. J. Rieser, & C. Zahn-Waxler (Eds.), *A century of developmental psychology* (pp. 589–615). American Psychological Association. <https://doi.org/10.1037/10155-021>
- Mantovani, S., Bove, C., Ferri, P., Manzoni, P., Cesa Bianchi, A., & Picca, M. (2021). Children 'under lockdown': Voices, experiences, and resources during and after the COVID-19 emergency. Insights from a survey with children and families in the Lombardy region of Italy. *European Early Childhood Education Research Journal*, 29, 1–16. <https://doi.org/10.1080/1350293X.2021.1872673>

- Manzano-León, A., Rodríguez-Ferrer, J. M., Aguilar-Parra, J. M., & Herranz-Hernández, R. (2021). Gamification and family leisure to alleviate the psychological impact of confinement due to COVID-19. *Children & Society*, 6(4), 433–449. <https://doi.org/10.1111/chso.12495>
- Marshall, S., & Reese, E. (2022). Growing memories: Benefits of an early childhood maternal reminiscing intervention for emerging adults' turning point narratives and well-being. *Journal of Research in Personality*, 99, 104262-104277. <https://doi.org/10.1016/j.jrp.2022.104262>
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *The American Psychologist*, 56(3), 227-238. <https://doi.org/10.1037/0003-066X.56.3.227>
- Masten, A. S. (2013). Risk and resilience in development. In P. D. Zelazo (Ed.), *The Oxford Handbook of Developmental Psychology*, vol. 2. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199958474.013.0023>
- Masten, A. S., & Cicchetti, D. (2010). Developmental cascades. *Development and Psychopathology*, 22(3), 491-495. <https://doi.org/10.1017/S0954579410000222>
- Masten, A. S., Lucke, C. M., Nelson, K. M., & Stallworthy, I. C. (2021). Resilience in development and psychopathology: Multisystem perspectives. *Annual Review of Clinical Psychology*, 17(1), 521-549. <https://doi.org/10.1146/annurev-clinpsy-081219-120307>
- Masten, A. S., & Narayan, A. J. (2012). Child development in the context of disaster, war, and terrorism: Pathways of risk and resilience. *Annual Review of Psychology*, 63(1), 227-257. <https://doi.org/10.1146/annurev-psych-120710-100356>
- Mat Hassan, N., Salim, H. S., Amaran, S., Yunus, N. I., Yusof, N. A., Daud, N., & Fry, D. (2023). Prevalence of mental health problems among children with long COVID: A

systematic review and meta-analysis. *PloS One*, 18(5), e0282538-e0282538.

<https://doi.org/10.1371/journal.pone.0282538>

McAdams, D. P., & McLean, K. C. (2013). Narrative identity. *Current Directions in Psychological Science : A Journal of the American Psychological Society*, 22(3), 233-238. <https://doi.org/10.1177/0963721413475622>

McAdams, D. P., Reynolds, J., Lewis, M., Patten, A. H., & Bowman, P. J. (2001). When bad things turn good and good things turn bad: Sequences of redemption and contamination in life narrative and their relation to psychosocial adaptation in midlife adults and in students. *Personality and Social Psychology Bulletin*, 27, 474–485.
<https://doi.org/10/fqbmwx>

McCarty, C. A., Zimmerman, F. J., Digiuseppe, D. L., & Christakis, D. A. (2005). Parental emotional support and subsequent internalizing and externalizing problems among children. *Journal of Developmental and Behavioral Pediatrics*, 26(4), 267.
<https://doi.org/10.1097/00004703-200508000-00002>

McLean, K. C., Syed, M., Pasupathi, M., Adler, J. M., Dunlop, W. L., Drustrup, D., Fivush, R., Graci, M. E., Lilgendahl, J. P., Lodi-Smith, J., McAdams, D. P., & McCoy, T. P. (2020). The empirical structure of narrative identity: The initial Big Three. *Journal of Personality and Social Psychology*, 119(4), 920–944 . <https://doi.org/10.1037/pspp0000247>

Mehrizi, Sima Haji Ali Akbari, Amani, O., Feyzabadi, A. M., & Kolae, Z. E. B. (2023). Emotion regulation, negative self-evaluation, and social anxiety symptoms: The mediating role of depressive symptoms. *Current Psychology (New Brunswick, N.J.)*, 42(25), 21541-21551. <https://doi.org/10.1007/s12144-022-03225-5>

- Menendez, D., Hernandez, I., G., Rosengren, K. S. (2020). Children's understanding of death. *Child Development Perspectives*, 14(1), 55-60. <https://doi.org/10.1111/cdep.12357>
- Menendez, D., Klapper, R. E., Golden, M. Z., Mandel, A. R., Nicholas, K. A., Schapfel, M. H., Silsby, O. O., Sowers, K. A., Sumanthiran, D., Welch, V. E., & Rosengren, K. S. (2021). "When will it be over?" U.S. children's questions and parents' responses about the COVID-19 pandemic. *PloS One*, 16(8), e0256692-e0256692. <https://doi.org/10.1371/journal.pone.0256692>
- Mistry, R. S., Benner, A. D., & Kimura, A. M. (2022). Covid-19 and children's social development: Insights from the life-course perspective. In P. K. Smith & C. H. Hart (Eds.), *The Wiley-Blackwell handbook of childhood social development* (3rd ed., pp. 224–238). Wiley Blackwell. <https://doi.org/10.1002/9781119679028.ch12>
- Mitchell, C., & Reese, E. (2022). Growing memories: Coaching mothers in elaborative reminiscing with toddlers benefits adolescents' turning- point narratives and wellbeing. *Journal of Personality*, 90(6), 887 - 901. <https://doi.org/10.1111/jopy.12703>
- Miyagawa, Y., & Taniguchi, J. (2020). Self-compassion and time perception of past negative events. *Mindfulness*, 11(3), 746-755. <https://doi.org/10.1007/s12671-019-01293-6>
- Montreuil, M., Gendron-Cloutier, L., Laberge-Perrault, E., Piché, G., Genest, C., Rassy, J., Malboeuf-Hurtubise, C., Gilbert, E., Bogossian, A., Camden, C., Mastine, T., & Barbo, G. (2023). Children and adolescents' mental health during the COVID-19 pandemic: A qualitative study of their experiences. *Journal of Child and Adolescent Psychiatric Nursing*, 36(2), 65-74. <https://doi.org/10.1111/jcap.12404>
- Morelli, M., Graziano, F., Chirumbolo, A., Baiocco, R., Longobardi, E., Trumello, C., Babore, A., & Cattellino, E. (2022). Parental mediation of COVID-19 news and Children's

- emotion regulation during lockdown. *Journal of Child and Family Studies*, 31(6), 1522-1534. <https://doi.org/10.1007/s10826-022-02266-5>
- Morris, A.S., Criss, M.M., Silk, J.S., & Houlberg, B.J. (2017). The impact of parenting on emotion regulation during childhood and adolescence. *Child Development Perspectives*, 11(4), 233-238. doi.org/10.1111/cdep.12238
- N'dure Baboudóttir, F., Jandi, Z., Indjai, B., Einarsdóttir, J., & Gunnlaugsson, G. (2023). "Just Standing Still": A qualitative study on adolescents' experiences of school closures due to emerging COVID-19 in Bissau, Guinea-Bissau. *International Journal of Environmental Research and Public Health*, 20(7), 5265. <https://doi.org/10.3390/ijerph20075265>
- Omaleki, V., Gonzalez, A. F., Hassani, A., Flores, M., Streuli, S., Guerra, A. W., & Fielding-Miller, R. (2024). "They protect us as if they were our mom" masking attitudes from freelist survey data and qualitative interviews in San Diego school communities. *Journal of Community Health*, 49(1), 17-25. <https://doi.org/10.1007/s10900-023-01245-1>
- Ozamiz-Etxebarria, N., Dosil-Santamaria, M., Picaza-Gorrochategui, M., & Idoiaga-Mondragon, N. (2020). Stress, anxiety, and depression levels in the initial stage of the COVID-19 outbreak in a population sample in the northern Spain. *Cadernos De Saúde Pública*, 36(4), e00054020-e00054020. <https://doi.org/10.1590/0102-311X00054020>
- Pals, J. L., & McAdams, D. P. (2004). The transformed self: A narrative understanding of posttraumatic growth. *Psychological Inquiry*, 15(1), 65-69. <http://www.jstor.org/stable/20447204>
- Parker, A. E., Halberstadt, A. G., Dunsmore, J. C., Townley, G., Bryant, A., Jr, Thompson, J. A., & Beale, K. S. (2012). Emotions are a window into one's heart": a qualitative analysis of parental beliefs about children's emotions across three ethnic groups. *Monographs of the*

- Society for Research in Child Development*, 77(3), 1–136. <https://doi.org/10.1111/j.1540-5834.2012.00676.x>
- Pascal, C., & Bertram, T. (2021). What do young children have to say? Recognising their voices, wisdom, agency and need for companionship during the COVID pandemic. *European Early Childhood Education Research Journal*, 29(1), 21. <https://doi.org/10.1080/1350293X.2021.1872676>
- Pasupathi, M., Mansour, E., & Brubaker, J. R. (2007). Developing a life story: Constructing relations between self and experience in autobiographical narratives. *Human Development*, 50(2–3), 85–110. <https://doi.org/10.1159/000100939>
- Pereira, A. I., Muris, P., Barros, L., Goes, R., Marques, T., & Russo, V. (2014). Agreement and discrepancy between mother and child in the evaluation of children's anxiety symptoms and anxiety life interference. *European Child & Adolescent Psychiatry*, 24(3), 327–337. <https://doi.org/10.1007/s00787-014-0583-2>
- Peterson, C., Morris, G., Baker-Ward, L., & Flynn, S. (2014). Predicting which childhood memories persist: Contributions of memory characteristics. *Developmental Psychology*, 50(2), 439–448. <https://doi.org/10.1037/a0033221>
- Piangiamore, G. L., & Maramai, A. (2022). Gaming and resilience: Teaching by playing together—Online educational competition at school during the pandemic. *Applied Sciences*, 12(23), 11931. <https://doi.org/10.3390/app122311931>
- Plomin, R., & Daniels, D. (2011). Why are children in the same family so different from one another? *International Journal of Epidemiology*, 40(3), 563–582. <https://doi.org/10.1093/ije/dyq148>

- Probst, S., Nowack, A., & Warneken, F. (2023). Children's moral reasoning about self- versus other-benefiting public health measures. *Journal of Experimental Child Psychology*, 229, 105623-105623. <https://doi.org/10.1016/j.jecp.2022.105623>
- Raby, K. L., Roisman, G. I., Simpson, J. A., Collins, W. A., & Steele, R. D. (2015). Greater maternal insensitivity in childhood predicts greater electrodermal reactivity during conflict discussions with romantic partners in adulthood. *Psychological Science*, 26(3), 348-353. <https://doi.org/10.1177/0956797614563340>
- Ramadhan, M. H. A., Putri, A. K., Melinda, D., Habibah, U., Fajriyah, U. N., Aini, S., Prananjaya, B. A., & Ikhsan, D. S. (2020). Children's mental health in the time of COVID-19: How things stand and the aftermath. *The Malaysian Journal of Medical Sciences*, 27(5), 196-201. <https://doi.org/10.21315/mjms2020.27.5.15>
- Randall, D., & Hallowell, L. (2012). Making the bad things seem better: Coping in children receiving healthcare. *Journal of Child Health Care*, 16(3), 305-313. <https://doi.org/10.1177/1367493512443907>
- Rapoport, J. L., Giedd, J. N., Blumenthal, J., Hamburger, S., Jeffries, N., Fernandez, T., Nicolson, R., Bedwell, J., Lenane, M., Zijdenbos, A., Paus, T., & Evans, A. (1999). Progressive cortical change during adolescence in childhood-onset schizophrenia: A longitudinal magnetic resonance imaging study. *Archives of General Psychiatry*, 56(7), 649-654. <https://doi.org/10.1001/archpsyc.56.7.649>
- Reese, E., Haden, C. A., Baker-Ward, L., Bauer, P., Fivush, R., & Ornstein, P. A. (2011). Coherence of personal narratives across the lifespan: A multidimensional model and coding method. *Journal of Cognition and Development*, 12(4), 424-462. <https://doi.org/10.1080/15248372.2011.587854>

- Rizzo, M. T., & Killen, M. (2016). Children's understanding of equity in the context of inequality. *British Journal of Developmental Psychology*, 34(4), 569-581.
<https://doi.org/10.1111/bjdp.12150>
- Rodman, A. M., Rosen, M. L., Kasparek, S. W., Mayes, M., Lengua, L., Meltzoff, A. N., & McLaughlin, K. A. (2024). Social experiences and youth psychopathology during the COVID-19 pandemic: A longitudinal study. *Development and Psychopathology*, 36(1), 366-378. <https://doi.org/10.1017/S0954579422001250>
- Rogers, L. O., Zosuls, K. M., Halim, M. L., Ruble, D., Hughes, D., & Fuligni, A. (2012). Meaning making in middle childhood: An exploration of the meaning of ethnic identity. *Cultural Diversity and Ethnic Minority Psychology*, 18(2), 99–108. <https://doi.org/10.1037/a0027691>
- Ros, A. M., Coyne, C. A., & Clarke, S. (2023). Paved with good intentions: How our systems intersect to create health disparities for multiply marginalized youth. *Suicide & Life-Threatening Behavior*, <https://doi.org/10.1111/sltb.13001>
- Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 9(1), 13–39. <https://doi.org/10.1007/s10902-006-9019-0>
- Sabol, T. J., & Pianta, R. C. (2012). Patterns of school readiness forecast achievement and socioemotional development at the end of elementary school. *Child Development*, 83(1), 282-299. <https://doi.org/10.1111/j.1467-8624.2011.01678.x>
- Saeed, H., Eslami, A., Nassif, N. T., Simpson, A. M., & Lal, S. (2022). Anxiety linked to COVID-19: A systematic review comparing anxiety rates in different

- populations. *International Journal of Environmental Research and Public Health*, 19(4), 2189. <https://doi.org/10.3390/ijerph19042189>
- Salmon, K. (2021). The ecology of youth psychological wellbeing in the COVID-19 pandemic. *Journal of Applied Research in Memory and Cognition*, 10(4), 564-576. <https://doi.org/10.1016/j.jarmac.2021.11.002>
- Samji, H., Wu, J., Ladak, A., Vossen, C., Stewart, E., Dove, N., Long, D., & Snell, G. (2022). Review: Mental health impacts of the COVID-19 pandemic on children and youth – a systematic review. *Child and Adolescent Mental Health*, 27(2), 173-189. <https://doi.org/10.1111/camh.12501>
- Sarkadi, A., Thell, M., & Jirblom, K. (2023). Perceptions of the COVID-19 pandemic as demonstrated in drawings of Swedish children aged 4–6 years. *Acta Paediatrica*, 112(6), 1275-1283. <https://doi.org/10.1111/apa.16706>
- Scheier, L. M., & Shigeto, A. (2022). Developmental cascades in studies of adolescent and young adult substance use etiology: A systematic review. *Addictive Behaviors Reports*, 15, 100420-100420. <https://doi.org/10.1016/j.abrep.2022.100420>
- Schonert-Reichl, K. A., Oberle, E., Lawlor, M. S., Abbott, D., Thomson, K., Oberlander, T. F., & Diamond, A. (2015). Enhancing cognitive and social-emotional development through a simple-to-administer mindfulness-based school program for elementary school children: A randomized controlled trial. *Developmental Psychology*, 51(1), 52-66. <https://doi.org/10.1037/a0038454>
- Şenkal, E., Kurt, Ö. M., Yalçın, S. S., Koller, D., & Boran, P. (2023). Seeing the pandemic through children's eyes: Exploring turkish children's views on COVID-19 pandemic by

- focus-group discussions. *Child : Care, Health & Development*, 49(5), 816-824. <https://doi.org/10.1111/cch.13099>
- Shahaeian, A., Nielsen, M., Peterson, C. C., & Slaughter, V. (2014). Cultural and family influences on Children's theory of mind development: A comparison of Australian and Iranian school-age children. *Journal of Cross-Cultural Psychology*, 45(4), 555-568. <https://doi.org/10.1177/0022022113513921>
- Shaikh, A. A., & Likhite, A. (2020). Awareness, Perception and Safety Practices about COVID-19 in School Children of 6-16 Years using COVID-19 Quiz. *International Journal of Health Sciences and Research*, 10(8), 42–48.
- Shi, Z., & Wang, Q. (2021). Chinese adolescents' coping with COVID-19: Relationships with emotional maladjustment and parental reactions to negative emotions. *Journal of Research on Adolescence*, 31(3), 645–656. <https://doi.org/10.1111/jora.12649>
- Shores, K., & Steinberg, M. P. (2019). Schooling during the great recession: Patterns of school spending and student achievement using population data. *AERA Open*, 5(3), PAGE NUMBER. . <https://doi.org/10.1177/2332858419877431>
- Shoychet, G., Kimber, M., Weiss, J., Honest, O., & Prime, H. (2023). Empirical support for a model of risk and resilience in children and families during COVID-19: A systematic review & narrative synthesis. *Development and Psychopathology*, 35(5), 2464-2481. <https://doi.org/10.1017/S0954579423000767>
- Singh, S., Roy, D., Sinha, K., Parveen, S., Sharma, G., & Joshi, G. (2020). Impact of COVID-19 and lockdown on mental health of children and adolescents: A narrative review with recommendations. *Psychiatry Research*, 293, 113429. <https://doi.org/10.1016/j.psychres.2020.113429>

- Sprang, G., & Silman, M. (2013). Posttraumatic stress disorder in parents and youth after health-related disasters. *Disaster Medicine and Public Health Preparedness*, 7(1), 105-110. <https://doi.org/10.1017/dmp.2013.22>
- Šrol, J., Ballová Mikušková, E., & Čavojová, V. (2021). When we are worried, what are we thinking? anxiety, lack of control, and conspiracy beliefs amidst the COVID-19 pandemic. *Applied Cognitive Psychology*, 35(3), 720-729. <https://doi.org/10.1002/acp.3798>
- Stänicke, L. I., Kurseth, P. O., & Bekkhus, M. (2023). ‘Everything turned upside down’: A thematic analysis of adolescents’ experiences of everyday life during COVID-19 restrictions. *Scandinavian Journal of Public Health*, 51(5), 692-703. <https://doi.org/10.1177/14034948231152272>
- Strömmer, S. T., Sivaramakrishnan, D., Shaw, S. C., Morrison, K., Barrett, M., Manner, J., Jenner, S., Hughes, T., Hardy-Johnson, P., Andreas, M., Lovelock, D., Paramanathan, S., Bagust, L., Buelo, A., Woods-Townsend, K., Burgess, R. A., Kanu, N., Gul, M., Matthews, T., . . . Jepson, R. (2022). Young people's experiences of COVID-19 messaging at the start of the UK lockdown: Lessons for positive engagement and information sharing. *BMC Public Health*, 22(1), 352-352. <https://doi.org/10.1186/s12889-022-12755-3>
- Sullivan P. Trump draws fire for saying he downplayed virus to avoid ‘panic.’ The Hill. September 11, 2020. Accessed October 30, 2020. <https://thehill.com/policy/healthcare/515951-trump-draws-fire-for-saying-he-downplayed-virus-to-avoid-panic>
- Tamarit, A., De la Barrera, U., Schoeps, K., Castro-Calvo, J., & Montoya-Castilla, I. (2023). Analyzing the role of resilience and life satisfaction as mediators of the impact of

- COVID-19 worries on mental health. *Journal of Community Psychology*, 51(1), 234-250.
<https://doi.org/10.1002/jcop.22900>
- Tambling, R. R., Tomkunas, A. J., Russell, B. S., Horton, A. L., & Hutchison, M. (2021).
 Thematic analysis of parent–child conversations about COVID-19: “Playing it safe”.
Journal of Child and Family Studies, 30(2), 325-337. <https://doi.org/10.1007/s10826-020-01889-w>
- Taylor, Z. E., Carrizales, A., Carlo, G., Herrera, F., Reyes, O., Escobedo, J., Burgos, G. S., &
 Ruiz, Y. (2024). The impact of COVID-19 on mental health and well-being of Latine
 youth from rural and agricultural families in the midwest. *Journal of Community &
 Applied Social Psychology*, 34(2), n/a. <https://doi.org/10.1002/casp.2788>
- Thompson, J., Spencer, G., & Curtis, P. (2021). Children's perspectives and experiences of the
 COVID-19 pandemic and UK public health measures. *Health Expectations*, 24(6), 2057-
 2064. <https://doi.org/10.1111/hex.13350>
- Tustin, K., & Hayne, H. (2016). Early memories come in small packages: Episodic memory in
 young children and adults. *Developmental Psychobiology*, 58(7), 852-865.
<https://doi.org/10.1002/dev.21423>
- Ünlütürk, B., & Velioğlu, İ. (2022). Examining children's questions and parents'
 responses about COVID-19 pandemic in turkey. *Current Psychology (New Brunswick,
 N.J.)*, 1-15. <https://doi.org/10.1007/s12144-022-03331-4>
- Varga, N. L., Esposito, A. G., & Bauer, P. J. (2019). Cognitive correlates of memory integration
 across development: Explaining variability in an educationally relevant phenomenon.
Journal of Experimental Psychology. General, 148(4), 739-762.
<https://doi.org/10.1037/xge0000581>

- Verhoeven, M., Poorthuis, A. M. G., & Volman, M. (2019). The role of school in adolescents' identity development. A literature review. *Educational Psychology Review*, 31(1), 35-63. <https://doi.org/10.1007/s10648-018-9457-3>
- Vuorenlinna, E., Välimäki, S., Lindberg, M., Sarkia, A., Hakovirta, M., & Nygård, M. (2023). Poverty as a driver of stigma among finnish children during the covid-19 pandemic—evidence from the 2021 Children's voice survey. *Child Indicators Research*, 16(6), 2631-2652. <https://doi.org/10.1007/s12187-023-10069-3>
- Wagner, D. A., Wolf, S., & Boruch, R. F. (2018). Learning at the bottom of the pyramid: Science, measurement and policy in low-income countries. UNESCO-IIEP.
- Warria, A. (2016). Mothers reflect on how they have assisted their children to cope with the terrorist attacks in Kenya. *Children & Society*, 30(5), 410-422. <https://doi.org/10.1111/chso.12178>
- Wiltshire, G., & Ronkainen, N. (2021). A realist approach to thematic analysis: making sense of qualitative data through experiential, inferential and dispositional themes. *Journal of Critical Realism*. <https://doi-org.prox.lib.ncsu.edu/10.1080/14767430.2021.1894909>.
- Wodda, A. (2018). Stranger danger. *Journal of Family Strengths*, 18(1). <https://doi.org/10.58464/2168-670X.1384>
- Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M. W., Gill, H., Phan, L., Chen-Li, D., Iacobucci, M., Ho, R., Majeed, A., & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorders*, 277, 55-64. <https://doi.org/10.1016/j.jad.2020.08.001>

Yin, O., Parikka, N., Ma, A., Kreniske, P., & Mellins, C. A. (2022). Persistent anxiety among high school students: Survey results from the second year of the COVID pandemic. *PloS One*, 17(9), e0275292-e0275292. <https://doi.org/10.1371/journal.pone.0275292>

Table 1. *Positionality of the Coding Team.*

Team Members	Salient Identities	Contributions to the Work	Collective Assumptions and Biases	Collective Methods Used to Account for Assumptions and Biases
Graduate Student Researcher	white; cisgender woman; raised in the southern United States; graduate-level developmental psychologist for three years with particular interests in parent-child interactions, emotions, and identity; childcare professional before and during the pandemic	Led the planning, implementing, analyzing, and interpreting of the child interviews.	<ul style="list-style-type: none"> • Children are active in their environments. • Culture matters, with socialization processes setting the rules of the various cultures. 	<ul style="list-style-type: none"> • Interview questions were designed to be non-leading, allowing for children to “not know” the answers without penalty. • All initial code categories were discussed by all coding members. • Re-interpretations of codes during manuscript development continued to involve two to three members of the coding team. • Children’s interviews only represent the experiences of the those children. • Researchers questioned each others’ interpretations and required evidence for claims being made. • Codes were contextualized within an international body of literature to maintain cultural sensitivity
Senior Research Scientist	white; cisgender woman; developmental psychologist for four decades with particular interest in emotion, culture, and racial justice; two generations parenting children and grandchildren, including during the pandemic; involvement in six infant-elementary school settings.	Provided expertise on qualitative methodologies; collaborated to analyze and interpret the child interviews.	<ul style="list-style-type: none"> • Children construct their understanding of events from information that was given to them and information they procure on their own. 	
Research Assistant	white; cisgender woman; first-generation American; raised in Malawi, Grand Cayman, and the northern United States; B.A. in Psychology former childcare professional.	Part of coding team co-creating codes and developing coder agreement in implementing codes and identifying coding exemplars.	<ul style="list-style-type: none"> • Children across ages are highly capable of understanding and responding to complex situations. • Families were exposed to information about COVID-19. 	
Research Assistant	white; Asian; cisgender woman; raised in the northern United States; B.A. in Psychology; childcare professional during the pandemic.	Involved in implementing child interviews; an Interviewer; part of coding team co-creating codes and developing coder agreement in implementing codes and identifying coding exemplars.		
Research Assistant	white; cisgender woman; raised in the southern United States; pursuing a B.A. in Psychology; childcare professional during the pandemic	Involved in fidelity of the transcripts; part of coding team co-creating codes and developing coder agreement in implementing codes and identifying coding exemplars.		

APPENDICES

Appendix A

CHILD INTERVIEW PROTOCOL**Part I: Establish Rapport and Ask for Assent**

[Parent Introduces child to interviewer.]

[Administration of assent procedure (see separate document); only children who have granted assent are included].

PROCEDURE FOR REQUESTING CHILD ASSENT (For Participants Ages 5-11)

[Parent Introduces child to interviewer.]

Interviewer: Hi, [Child's Name]. I'm happy to meet you! My name is [Name] and I [go to school/work at] NC State. I'm working with some other people at State on a research project. Research means solving a problem or trying to understand in an organized way. We want to learn what children your age know about staying safe from COVID-19 and how they've been feeling lately. So, I'd like to ask you some questions about what to do to stay safe. Asking and answering questions is called an interview.

But first I need to make sure that you choose to talk with me! Your [mom/dad] said it was OK but I need your permission, too. Let me tell you more about my questions. Some may be easy, and some may be hard. I don't expect anyone to know all the answers, even children older than you are. If you choose to take part in the interview, you don't have to answer any question you don't want to answer, and you can take a break any time. It's OK If you choose NOT to take part, or if you choose to end the interview before I ask all the questions.

I'm interested in what children know without any help, so I'll ask your parent to stay in another room or wear earphones. But you may need your parent to help with zoom, or your parent may choose to be where we are. So, I can't promise that your answers today will be private, but remember that you don't have to answer any questions you don't want to answer.

One more thing: if you say "yes" to the interview, I will record our voices but not our pictures.

Do you have any questions about the interview? [Interviewer responds to relevant questions, asks to discuss unrelated questions later]. What is your choice? [Wait for response.] [Follow-up if needed] Do you say "yes" to the interview or "no" to the interview?

If NO: Thank you for letting me know. Would you get your [mom/dad] so I can say good-bye?

If YES: Thank you for agreeing to take part. Let's get started!

Part II: Spence Anxiety Scale

I'm so glad you've agreed to talk with us today! To start, we're going to talk about how you've been feeling lately - over the past 2 weeks or so. Just in general, whether it's because of COVID or not.

[share screen with item list]

Can you see the list I just put on the screen? I'm going to read each sentence out loud and I'd like you to tell me how often each of these things happen to you. Please answer never, sometimes, often, or always.

There are no right or wrong answers, I just want to find out how kids like you have been feeling lately.

[Read each item out loud, moving the cursor each time. Repeat the answers if needed ("would you say you never feel afraid, sometimes feel afraid, often feel afraid, or always feel afraid?")]

- 1. I worry that I will suddenly get a scared feeling when there is nothing to be afraid of*
- 2. I feel afraid*
- 3. I worry about being away from my parents*
- 4. I suddenly start to tremble or shake when there is no reason for this*
- 5. I have trouble starting school in the mornings because I feel nervous or afraid*
- 6. I would feel scared if I had to stay away from home overnight*
- 7. I feel scared if I have to sleep on my own*
- 8. I worry about things*

Part III: Safety Guideline questions

[Interviewer/assistant checks off components on a standard list as child talks. Waits for responses. If prompting is needed, interviewer provides empty prompts: "Anything else?" "Can you tell me anything you do to stay safe?". Do not praise answers or indicate whether or not they are correct, but it's OK to repeat child's answers in prompting for more information or to praise child's effort: "You're really helping me find out what children know," "Good working!"]

Thank you for telling me about how you've been feeling lately! Now, I want to find out what kids your age know and don't know about COVID-19. Think about things that are happening now, and also things that happened at any time during the pandemic (when you were in grade x or $x + 1$ instead of grade $x + 2$) Remember I'm only interested in what you know, so there

aren't any right or wrong answers. And, it's OK if you don't know some answers. Just say, "I don't know."

First, can you tell me what COVID-19 is?

[If no:] I'm talking about what's been making people sick. Can you tell me about that?

Question 1:

*Tell me everything you do or did during the pandemic to protect **yourself** from COVID. [Check off each component the child recalls on the checklist.]*

If child is non responsive:

- *Can you tell me one thing you do or did to protect yourself from COVID?*

When child stops listing items (even if in between every component):

- *What else do you do or did to protect yourself from COVID?*

When they are done listing items:

- *Can you think of anything else?*
- *Is that all you can think of?*

Question 2:

*Tell me everything you do or did to protect **other people** from COVID. If you do something to protect other people that you already told me was something you do to protect yourself, just say it again.*

If child is unresponsive:

- *Can you tell me one thing you do or did to protect other people from COVID?*

When child stops listing items (even if in between every component):

- *Tell me more things you do or did to protect other people from COVID.*

When they are done listing items:

- *Can you think of anything else?*
- *Is that all you can think of?*

Question 3:

Some other people need to do more things to stay safe from COVID that you don't do. Can you think of anything that some people do that you don't?

[Check off each component the child recalls on the checklist]

If child is non responsive:

- *Can you tell me one thing that some people have to do to stay safe from COVID?*

When child stops listing items (even if in between every component):

- *Tell me more things that some other people have to do to stay safe from COVID.*

When they are done listing items:

- *Can you think of anything else?*
- *Is that all you can think of?*

Is there anything else you can think of that you or anyone else does or did to protect you or other people from COVID?

Now I'm going to ask some more questions about what you just told me. Some are easy and some are hard, I just want to find out what kids like you know.

But, before we get started, do you want to take a break? We can do some stretches or jumping jacks together if you'd like.

[if yes, set a timer for 3 minutes]

[For each of the components spontaneously mentioned by the child across all beginning questions, ask follow-up questions below. Elaborations are based on how, what, when, why questions, but the interviewer does not actually ask these questions for each component, only for the 4 main components: hand washing, mask wearing, social distancing, staying home/quarantining.]

Hand washing

- *You told me you wash your hands, can you tell me more about washing your hands?* ●
- [If unresponsive, or when child stops elaborating, ask:]
 - *How do you wash your hands?*
 - *Why do you wash your hands?*
 - *When do you wash your hands?*

Mask wearing

- *You told me you wear a mask, can you tell me more about wearing a mask?*
- [If unresponsive, or when child stops elaborating, ask:]
 - *When do you or did you wear a mask?*
 - *How do you wear a mask?*
 - *Why do you wear a mask?*

Social distancing

- *You told me you social distance, can you tell me more about social distancing?*
- [If unresponsive, or when child stops elaborating, ask:]
 - *When do you social distance?*

- *How do you social distance?*
- *Why do you social distance?*

Quarantining

- *You mentioned staying home or quarantining if you're sick. Can you tell me more about that?*
- [If unresponsive, or when child stops elaborating, ask:]
 - *What does it mean to quarantine?*
 - *When might you have to quarantine?*
 - *Why do you quarantine?*

Hand sanitizer

- *You told me you use hand sanitizer, can you tell me more about using hand sanitizer?*
- [If unresponsive, or when child stops elaborating, ask:]
 - *What is hand sanitizer?*
 - *Why do you use hand sanitizer?*
 - *When do you use hand sanitizer?*

Avoiding gatherings

- *You told me you avoid crowds, can you tell me more about avoiding crowds?*
- *Or: You told me you don't go to [place], can you tell me more about that?*
- [If unresponsive, or when child stops elaborating, ask:]
 - *Why do you avoid crowds?*

High risk people

- *You mentioned not being able to see [person/older people/high risk people], can you tell me more about not being able to see them?*
- [If unresponsive, or when child stops elaborating, ask:]
 - *Why can't/couldn't you see [person/older people/high risk people]?*

COVID screening

- *You told me you had your temperature taken at [place], can you tell me more about that?*
- *Or: You mentioned COVID screenings, can you tell me more about that?*
- [If unresponsive, or when child stops elaborating, ask:]
 - *How do COVID screenings (like that) work?*
 - *Where have you been that they screen for COVID?*
 - *Why do they screen for COVID?*

Exposure

- *You told me about what you did when you were exposed, can you tell me more about that?*
- *Or: You mentioned what to do if you get exposed, can you tell me more about that?*
- [If unresponsive, or when child stops elaborating, ask:]

- What does it mean to be exposed to COVID?
- What happens if you get exposed?
- How might you get exposed?

Testing

- *You mentioned getting tested, can you tell me more about that?*
- [If unresponsive, or when child stops elaborating, ask:]
 - How does testing work?
 - Why might you get tested?
 - What happens after you get tested?

Vaccine

- *You mentioned the vaccine, can you tell me more about the vaccine?*
- [If unresponsive, or when child stops elaborating, ask:]
 - How does the vaccine work?
 - What happens after someone gets the vaccine?
 - Why do they get the vaccine?

PPE

- *You mentioned that some people (or specific person) have to wear special things to protect them at their jobs, can you tell me more about that?*
- [If unresponsive, or when child stops elaborating, ask:]
 - What kinds of things do they wear?
 - Why do they wear that?
 - Who has to wear that?

Working from home

- *You mentioned that some people (or grown ups/specific person) have to work from home, can you tell me more about that?*
- [If unresponsive, or when child stops elaborating, ask:]
 - Who exactly works from home?
 - Why do they work from home?
 - What do they do when they work from home?

[After going through each of the components they spontaneously listed, if they didn't list one of the four most important (wear a mask, wash your hands, social distance, stay home/quarantine), then follow up with these questions:]

You did a great job telling me things people can do to protect themselves and others. There were a few things you didn't mention, so I want to go over those now.

Masks:

- *Is there anything special you wear to stay safe from COVID?*

- [If they correctly answer “mask”:]
 - *What can you tell me about wearing a mask?*
- [If unresponsive, or when child stops elaborating, ask:]
 - *When do you or did you wear a mask?*
 - *How do you wear a mask?*
 - *Why do you wear a mask?*

Hand washing:

- *Is there anything you do to get rid of COVID germs that get on you?*
- [If they correctly answer “washing hands”:]
 - *What can you tell me about washing your hands?*
- [If unresponsive, or when child stops elaborating, ask:]
 - *How do you wash your hands?*
 - *Why do you wash your hands?*
 - *When do you wash your hands?*

Social distancing:

- *Is there anything you do to stay away from COVID germs when you’re around other people?*
- [If they correctly answer “social distancing”:]
- [note: if they don’t say the term “social distancing”, but it’s clear they know what it is, it’s okay to give them the term (ex: “Yes, and we call that social distancing.”)]
 - *What can you tell me about social distancing?*
- [If unresponsive, or when child stops elaborating, ask:]
 - *When do you social distance?*
 - *How do you social distance?*
 - *Why do you social distance?*

Quarantining:

- *What should you do if you think you’ve come in contact with COVID or if you feel sick?*
- [If they correctly answer “stay home” or “quarantine”:]
 - *What can you tell me about staying home/quarantining?*
- [If unresponsive, or when child stops elaborating, ask:]
 - *What does it mean to quarantine?*
 - *When might you have to quarantine?*
 - *Why do you quarantine?*

So, we’ve talked about lots of things to do to protect yourself and other people from COVID. Can you tell me why you do all of those things?

What might happen if you didn’t do those things?

Part IV: Science/Virology questions

[If a correct answer was already given in the first question (Part II) of the interview, mark correct and proceed with elaboration questions.]

We've talked a lot about COVID and how to stay safe. Now I want to ask you some questions about how COVID works and what causes it. Again, I just want to find out what kids your age know. If there's a question you don't know the answer to, just say "I don't know".

First, is there anything else you can tell me about COVID and how it works?

(You told me) COVID is a virus. Can you tell me what a virus is?

How is COVID spread from one person to another?

Who gets COVID?

[If the child has already elaborated on high risk people, do not repeat those questions]

Do you know what risk means?

- If no: *risk means how likely something is to happen. Low risk means something is probably not going to happen, and high risk means something is more likely to happen.*

What does it mean to say someone is at risk of getting sick from COVID?

Elaborations:

- *Does everyone have the same risk of getting sick from COVID?*
 - *What puts some people at higher risk than others of getting sick from COVID?*
- *How much can you control whether you get sick from COVID or not?*
 - *Not at all, a little, some, a lot, completely*
- *If someone does get COVID, does that mean they did something wrong?*
 - *[If yes:] What do you think they did wrong?*
- *If someone does everything they're supposed to do to protect themselves, can they still get COVID?*
 - *[If yes:] You're right that it's possible, but we're lucky that doesn't happen very often.*
 - *[if no:] Actually, it is possible, but we're lucky that doesn't happen very often.*

Part VI: Ending question

*We've talked a lot about the pandemic, which hasn't been a very good time overall for many people. But even difficult times can have some good parts. Tell me about anything that was **good** for you during the pandemic.*

[If no answer:] *can you think of one thing?*

Did you try anything new?

Was there anything you got to do more of?

Did you do some special things?

Anything else?

Alright, we're done! Thank you so much for helping me with this! Can you go get your [mom/dad] so we can say goodbye?

At the end of the interview, rate child's cooperation: 1 (needed constant redirection) – 7 (on-task throughout the interview)

Appendix B

CHILD INTERVIEW THEMATIC CODEBOOK

- **Provision of Information: Who, How, and Why:** Where children source their information.
 - **Who:** People and/or sources whom the child references as having provided them knowledge or insights. Authorities on the pandemic
 - **Conversation Partners:** People whom the child references as having provided them knowledge or insights
 - Example: Lola "I went to lunch with a person who works at the ambulance center"
 - **Public Information Sources:** Sources that the child references as having provided them knowledge or insights
 - Example: Dora "I wasn't exactly like super nervous, just like reading everything I found on the Internet about it. Yeah. Once or twice I would like a recommendation in my search bar like "these are trending searches", and they were all about Covid. Maybe I would like click on them once. But no, not really. I didn't really like go and research because I was nervous."
 - **How:** The ways in which children interacted with information sources
 - **Direct Pedagogy:** Teaching, directing, or instruction
 - Example: Dora "My dad was like reading his Economist thingy, and he was like...then he taught us how to wash our hands."
 - **Interactions with Others:** Things that children were doing alongside other people
 - Example: Vera "Me and my brother use hand sanitizer - like for our school...then, once after, usually like after a week of school our hands would all be dry and red."
 - **Observations of Others:** Things that children observed others doing
 - Example: Betsy "Some other people I've heard, they can lose their smell and taste sometimes."
 - **Why**
 - **Decision Making:** Child seeks out others to make choices about health, safety, and/or behavior on behalf of the child
 - Example: Evelyn "Also, like I don't know. I never really knew what it was. My parents do. So. Yeah."
 - **Pragmatic Support:** Child seeks out someone as a way to meet an immediate need
 - Example: John "I would tell a teacher"
 - **Knowledge Acquisition:** Child interacts with an information source as a way of learning more
 - Example: Nicholas "I saw this um in a TV show"
 - **Forming Unique Perspectives:** Child takes the information they've gathered to inform their own pandemic-related beliefs. These beliefs can be different from those of parents, etc.

- **Approaches and Reasoning:** The act of thinking through the information and circumstances around them; emphasis on the dynamic reasoning process
 - **If-Then Thinking:** The child's active reasoning process necessary to derive meaning when asked a question or forming an opinion
 - Example: Evelyn "...You could get COVID, and then not feel anything. So I think that some people don't feel anything when they get COVID, so they don't have the same risk"
 - **Curiosity:** Child asked the interviewer questions as a way to share or learn information
 - Example: Angelo "Hmm, sometimes um, well, I can't really think anybody else has done anything different, because I don't really know. But I don't really know what they do that much, so I'm just curious."
 - **Dialectic Thinking:** Child presents a juxtaposition of opposing thoughts/statements. Opposing things can be true at the same time
 - Example: Sarah "Um, I know like I didn't want COVID, but you have COVID and you keep watching TV...And then you like COVID"
 - **Absolute Thinking:** Either a thing just "is" or a thing is "either-or" but there is a simplistic clarity to the thinking.
 - Example: Lola "You can wear a mask, and you won't get COVID."
- **Perceptions of Pandemic-Related Risks and Safety:** How the child experiences COVID-19 (e.g., a hard time...) [Perception of COVID as hard or smooth-sailing, and can be **evaluative**, but distinguish this from "bad things happened" during COVID, which is a negative outcome code]. Reflects the outcomes of past reasoning and information synthesis
 - **Scientific Knowledge:** Children's discussions of what COVID-19 is and how it works, typically in responses to direct questions about the virus and disease transmission
 - Example: Keegan "How COVID works is that it's a fluid, and it loves going in people's body..."
 - **Perceptions of COVID-19 Safety:** child's spontaneous evaluations on the efficacy, value, or beliefs about actions related to avoiding COVID-19
 - Example: Rebecca "I wore a mask...And I hate it."
 - **Developing Perception of Risk:** To what degree is covid dangerous or not dangerous? If it is/isn't, what is the perceived risk/consequence? Almost always prompted
 - Example: Francine "Yes, like people who have certain medical conditions have a higher risk for COVID than, um, others, and I think also like young children have a higher higher higher risk- don't- I'm- that's not, I'm not for sure on that. I think kids are at higher risk than adults. Cause they got like the vaccine after the adults did, so they had the longer time." also Dora "Well, I know kids are like less or lower risk of getting it like risk. Is it kind of like more likely to get it with less likely to get it?...I think older people are more likely to get it?"

- **COVID is Tricky:** Navigating the pandemic is complex. There's nuance in how people experience COVID-19
 - Example: Jodie "People who don't have shots. Or people who have gotten shots. The antibodies are still researching it so they don't know how to beat it yet."
- **Outcome of COVID:** What has happened as a result of the pandemic (more descriptive than evaluative)
 - **Personal Experience:** instances where the child disclose the actions of their parents, actions of others, or personal exposure. Typically used to justify and draw conclusions about COVID-19 and pandemic related actions/behaviors
 - Example: Mark "I mean, my parents, they switched me from a public school to a private school right before COVID, so that was just the right time, because I wasn't really affect by [COVID-19] because the private school's in person")
 - **Social Comparisons:** Covid related changes in relation to others
 - Example: Nicholas "Here's something that I want to tell you. It affected on some. It affected on Mom and Dad actually affected our Mom a bunch, and it only a little bit for Dad, and um, and [sibling name] often, for me, It didn't affect me, Mm-hmm a bunch of times. I felt great."
- **Affect:** What children felt related to the pandemic. Only include when the child reports on their own emotional responses NOT when they are making comments on their parents or siblings emotional responses
 - **Negative Affect:** Child feels negatively about some event/quality related to COVID-19 (e.g., masking, testing, quarantining, etc.)
 - Example: Marina "I don't really think that there was anything good that happened to me, because it was kind of annoying that I had to stay in my house, and I couldn't get out of that house"
 - **Positive Affect:** positive feelings regarding COVID-19 or a COVID-19-related event (e.g., mask wearing, Zoom, etc); positive changes occurring as a result of COVID-19 (COVID-19 is the cause of these benefits, they are positive COVID-related changes)
 - Example: Jodie "Then there's something that really enjoys me: you get to stay in bed"
 - **Dialectic Affect:** simultaneous negative and positive feelings regarding COVID-19 or a COVID-19-related event
 - Example: Gwen "It wouldn't really be fun, because sometimes it wouldn't be fun because you wouldn't get to spend time with people and stuff, but sometimes it is fun because you can still get to spend time with people it would just be a little bit far apart."
- **Values**
 - **Protection**
 - **Protection of Others:** children spontaneously voice concern for protecting others

- Example: Brendan “So, staying home when you’re sick is really important because if you don’t do that then other people will catch the um, the germs or sickness that you have, and they’ll get infected with it too.”
- **Protection of Self:** children spontaneously voice concerns for self-protection
 - Example: Lee "To not spread germs and not get germs."
- **External Protection:** children note other actors as driving forces in maintaining safety throughout the pandemic
 - Example: Nicholas “Well, my Mom and Dad tried to keep me inside the house but I went like “No, I want to go outside!” and they were like “no, stay away from other people.”
- **Stranger Danger:** child describes fear of strangers because of potential for COVID-19 infection from strangers/people they don't know (e.g., Strangers 'germs'), rather than pre-COVID-19 sentiments that children should fear strangers because they may harm them (e.g., kidnappers)
 - Example: Vera "Child: Sometimes I wear a mask, because sometimes I don't feel comfortable with not wearing a mask, because there's a lot of things that people usually get germs on, and I usually don't like um to like have contact with anyone that I don't know, and sometimes they might have something on them that I don't want."
- **Social Connectedness:** child describes/identifies changes in their social life in the context of COVID
 - Example: Dora "I didn't really like like. Get, you know, hugs I didn't really like hug my friends, or anything, or like go like ,we didn't really be really close to each other, because we weren't really allowed to.")
- **Control and Personal Agency:** Degree of control child displays/describes (control over own safety, control over self, control over others, etc.)
 - **Personal Responsibility:** commitment and/or obligation to behaviors to keep self/others safe by either the child or others in the world. Whether or not you get COVID is within your power.
 - Example: Dora "Um, to protect others. I'm pretty sure it protects others more than it protects yourself...That's why I learned how to wear it right."
 - **Agency:** children are actors who feel like they can contribute to action in the world related to COVID. Child displays agency and advocates for their opinion (or even the "right thing" if it is contradictory to their own opinion)
 - Example: Rebecca "And I hate it. My mom is not used to masks anymore when when we were at a party she we were at a play it was like um we um when we were in the car waiting for the show to start um the she found a mask and she's like, oh, no, I do not want to wear this anymore. I made her put it on."
 - **Understanding the Uncontrollable:** includes understanding the ambiguity of getting COVID – acknowledges that there may be actions

from others or the world around us that we cannot control; acknowledges the ambiguity of COVID and COVID transmission.

- Example: Dora "Yeah, Yeah, Because, like, I mean, it happened to us like we were like super careful, and we still got it, and part of that is, um, if you are around people who are not as cautious as you are, you know. If you're you, um, if you are like, you can be like the most careful person like ever, but you might still get it, and it's like, um, it's, you can't really entirely control, like, really, if you get it or not"
- **Accountability:** Child imparts moral judgment on an action/decision/event based on intent vs. impact and/or personal control
 - Example: Angelo "I don't really blame you because you could have made a slight mistake. So I don't really blame you."