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## COVID-19 pandemic impacts on kindergarteners' mental health: A qualitative study of perspectives of U.S. mothers with low income

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### Abstract

Because the COVID-19 pandemic has been implicated in increased mental health concerns for families of low income, we aimed to describe maternal perspectives about the pandemic's impact on their kindergartener's mental health during the 2020–2021 school year. We conducted 22 in-depth, semi-structured interviews with U.S. mothers with low income who had kindergarten-age children (50% male and 50% female). All participants were female, ranging in age from 24 to 44 years, and reported the following ethnic/racial identities: non-Hispanic Black or African American (41%), Hispanic of any race (36%) and non-Hispanic, White (23%). With a team comprising multiple researchers from varied disciplines (e.g., medicine, education and public health) our analytic process used an iterative approach for developing and revising codes and

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#### AUTHOR CONTRIBUTIONS

**Khara L. P. Turnbull:** Conceptualization; formal analysis; writing – original draft. **Brianna Jaworski:** Conceptualization; formal analysis; writing – review and editing. **Deiby Mayaris Cubides Mateus:** Conceptualization; formal analysis; writing – review and editing. **Frances Coolman:** Conceptualization; formal analysis; writing – review and editing. **Jennifer LoCasale-Crouch:** Formal analysis; funding acquisition; writing – review and editing. **Rachel Y. Moon:** Formal analysis; writing – review and editing. **Fern R. Hauck:** Formal analysis; writing – review and editing. **Ann Kellams:** Formal analysis; writing – review and editing. **Eve R. Colson:** Conceptualization; formal analysis; funding acquisition; supervision; writing – review and editing.

#### CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

#### ETHICS STATEMENT

This study was conducted with Institutional Review Board approval from the University of Virginia (protocol #3366) and all participants gave informed consent to participate.

themes until we reached thematic saturation. Most mothers described negative impacts on social, behavioural and emotional aspects of mental health. Some described positive social impacts, including strengthened family relationships. Mothers described no positive changes to behavioural or emotional aspects of mental health. Maternal perspectives suggest the importance of prioritising access to screening and treating mental health needs to support children's kindergarten transition, mitigate pandemic impacts and plan for future disruptions.

### Keywords

COVID-19 pandemic; kindergarten transition; low income; mental health; qualitative

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## 1 | INTRODUCTION

The COVID-19 pandemic has changed life for families in unprecedented ways. Families of low-income households with young children have particularly been affected (Dooley et al., 2020). In March 2020, schools and childcare centres closed abruptly to mitigate the spread of SARS-CoV-2 (the virus causing COVID-19), affecting ~21 million children in childcare and ~57 million school-age children in the United States alone (Donohue & Miller, 2020). Globally, some 888 million children experienced education disruptions due to full and partial school closures during the first full school year of the pandemic (2020–2021) (UNICEF Press Release, 2021). As with their peers worldwide, U.S. children continued to experience inconsistent access to childcare and schooling and variation in service delivery during the 2020–2021 school year (Cook et al., 2022; COVID-19 School Data Hub Team, 2021). Economic, educational and social disruptions have imposed a greater risk for mental health challenges on children from low-income backgrounds than their peers from higher-resourced backgrounds (The U.S. Surgeon General's Advisory, 2021). Thus, there is a critical need for research that elevates the voices of those marginalised by the pandemic (Dooley et al., 2020) to inform supports that address the mental health concerns families identify as most pressing.

Mental health is an umbrella term that encompasses thoughts, feelings and actions throughout the entire lifespan (U.S. Department of Health & Human Services, 2022). Recent federal guidance for schools recommends prioritising three interrelated components of mental health: social (how we relate to others), behavioural (how we act) and emotional (how we feel), to promote well-being (U.S. Department of Education, Office of Special Education and Rehabilitative Services, 2021). Supporting children's mental health as they transition to kindergarten is critical. Both theories, including the bioecological model of human development and research suggest that during this key developmental period, routines and interactions in proximal contexts (e.g., home, childcare and school) have a profound bearing on children's academic trajectories and social, behavioural and emotional development (Bronfenbrenner & Morris, 2006; Ferretti & Bub, 2017; Mashburn et al., 2018; Turnbull et al., 2022; Welchons & McIntyre, 2017). Thus, examining changes and disruptions to family routines, schooling and peer interactions can inform our understanding of social, behavioural and emotional aspects of children's mental health during the pandemic.

Within the first few months of the COVID-19 pandemic, >25% of parents reported worsening mental health for themselves, and roughly 1 in 7 reported worsening mental health for their children (Patrick et al., 2020). Many parents also reported cancelling or delaying routine healthcare visits, including behavioural health visits (Patrick et al., 2020), and out of necessity, had to assume greater responsibility for monitoring and supporting their child's well-being. Regarding social and emotional aspects of mental health, an online survey of U.S. parents of preschoolers in May 2020 revealed more than one-third of parents were concerned about their children's social–emotional development and reported few opportunities for social interaction with other children during distance learning (Stites et al., 2021) – findings which suggest the need for additional social–emotional engagement for children entering kindergarten after the pandemic had started.

During the 2020–2021 school year, parents and caregivers continued to experience schooling disruptions, becoming largely responsible for supporting children's learning (Cook et al., 2022; Garbe et al., 2020; Levickis et al., 2022; Misirli & Ergulec, 2021). Children also experienced diminished access to school-based health services and support, and caring adults on whom they might have relied when schools were open (Dooley et al., 2020). Given the co-occurrence of low-income status with other family-level structural, social and psychological stressors (Yoshikawa et al., 2012), children from low-income households are at particular risk of continued challenges to their well-being (Chen et al., 2022; Van Lancker & Parolin, 2020). The aim of the present study was to better understand the COVID-19 pandemic's impact on the mental health of kindergarten-age children from families of low income during the first full school year of the pandemic.

## 2 | METHODS

### 2.1 | Participants

We conducted a qualitative study of the impacts of COVID-19 on children and their families through in-depth, semi-structured interviews with U.S. mothers of kindergarten-age children as they reflected on the 2020–2021 school year and the impacts on social, behavioural and emotional aspects of mental health. Mother–child dyads were initially recruited at the child's birth for a study of infant care practices. All mothers were English-speaking, and all infants were born healthy at term between March 2015 and May 2016 at sixteen U.S. hospitals, and had participated in a study of infant care practices at that time (Moon et al., 2017). All mothers who had agreed to continue participating in research studies and whose child was kindergarten eligible at the start of the 2020–2021 school year ( $n = 117$ ) were eligible to participate in a study examining child health and well-being during 2020–2021. Of the 117 mothers, we identified 38 who were in the lowest tercile for household income (<\$15K per person in the household) to participate in the current study. We emailed 4–5 mothers at a time to describe the study's purpose and invite them to participate in an interview; we followed up after 1 week by phone if we had not received a response. Of those contacted for the study, one mother declined to participate, three did not respond and 22 signed an informed consent form, completed an interview between 6/29/2021 and 9/1/2021, and received a \$50 electronic gift card for participation. We did not contact or attempt to recruit the remaining 12 eligible mothers after the team determined we had attained

thematic saturation (i.e., no new themes were emerging from the interview data). This study was conducted with Institutional Review Board approval from the University of Virginia (protocol #3366), and all participants gave informed consent to participate.

## 2.2 | Procedures and instrumentation

The bioecological model of human development (Bronfenbrenner & Morris, 2006) informed the study design and interpretation of results, as we explored changes in children's routines and interactions with those in their immediate environments (e.g., family, ECE professionals and peers) in relation to social, behavioural and emotional aspects of their mental health. We piloted the interview guide with four mothers of kindergarten-age children to improve the clarity of the questions and probes (Crabtree, 1999); the final interview guide focused on maternal perceptions of positive and negative impacts of the COVID-19 pandemic on social, behavioural and emotional aspects of their child's mental health (see Table 1 for interview guide questions). When mothers described impacts on their children, interviewers probed for specific examples and descriptions. Each interview lasted between 30 and 60 min. Interviews were conducted by trained interviewers using a virtual meeting platform and were audio-recorded and professionally transcribed. Interviews continued until thematic saturation was reached and the interview data were not yielding additional themes.

## 2.3 | Data analysis

We used a systematic and iterative approach using the constant comparative methods (Guest et al., 2012), allowing concepts and themes to emerge during data collection and analysis. The analysis followed three phases. In the first phase, seven investigators reviewed interview transcripts and independently drafted memos on themes and patterns in the data (Miles et al., 2014). These investigators then met to discuss their initial observations of the data and generate an initial code list. In the second phase, one team member drafted a codebook using the initial codes, and 2–4 investigators coded each transcript independently using *Dedoose*, a qualitative data analysis software program. In the third phase, four investigators discussed their application of codes and the memos they had generated, confirmed themes, sought and discussed disconfirming evidence and resolved all disagreements through group discussion. The team addressed the trustworthiness of findings by including multiple researchers from varied disciplines (e.g., medicine, education and public health) in the analytic process (Hanson et al., 2011).

## 3 | RESULTS

Participants were English-speaking mothers who identified as non-Hispanic Black (41%), Hispanic of any race (36%) and non-Hispanic White (23%), living in 8 U.S. states. Their children (50% female) were on average 67 months of age ( $SD = 1.4$ ) and were born healthy at term between March 2015 and May 2016. All participants had household incomes <250% of the 2021 federal poverty level. A total of 27% of mothers indicated they were the only adult living in the household and 41% reported there were more children (<18 years) living in the household than adults. Additionally, nearly 1/3 of mothers indicated their employment hours or status was affected (e.g., laid off, reduced hours, change in work location and business closed) during the pandemic. All mothers reported that their children experienced

a complete COVID-19-related closure of childcare or school at some point during the pandemic. See Table 2 for participant demographic information.

Mothers described various learning modalities for their child during the kindergarten year, including fully remote, virtual (online) learning ( $n = 11$ ; 50%), a combination of in-person and virtual instruction ( $n = 7$ ; 32%), in-person instruction throughout most of the school year ( $n = 3$ ; 14%) and homeschooling that began before the pandemic and continued ( $n = 1$ ; 5%). Twenty mothers (91%) reported that their children experienced at least some virtual instruction during their kindergarten year. Of the seven children who experienced a combination of in-person and virtual instruction, 1 child began in-person instruction in January, 4 children began in-person instruction in March and 2 began within the last 6 weeks of school or ‘at the end of the year’. Most mothers who reported their children engaged in some form of virtual learning described synchronous class meetings using a virtual meeting platform. Reports of daily instructional time also varied, ranging from half-day or less to full-day.

Themes and subthemes that emerged from the mothers' lived experiences were in the domains of (1) *social impacts* (2) *behavioural impacts* and (3) *emotional impacts* on children's mental health. We provide an overview of these domains, associated themes and subthemes and exemplar quotes in Table 3.

### 3.1 | Impacts of the COVID-19 pandemic on social aspects of mental health

Many mothers reported the social impacts of the COVID-19 pandemic on their children. Although some mothers described positive or no impacts, most mothers described negative social impacts.

**3.1.1 | Social impacts: Positive or no impacts**—Mothers who identified positive or no impacts of the COVID-19 pandemic on social aspects of their child's mental health described experiences pertaining to the subthemes of (1) maintaining existing friendships and (2) strengthening relationships with family.

Regarding maintaining existing friendships, some mothers described how their child's relationships with peers were not impacted by the pandemic due to routines outside of school that enabled their child to socialise with peers. For instance, a mother of two children who worked part-time (Mother #15) described how her daughter's interactions with peers as part of a regular playgroup allowed her to maintain existing friendships, saying, ‘I don't think it impacted anything with her as far as relationships with friends. Because even through during the pandemic, we always kept in touch with people. So, we kind of had a little group that we would meet for them to play’. Other mothers described that, although the modality for socialising with peers changed from in-person to virtual, there was no noticeable impact on the amount or quality of peer socialisation their child experienced.

Some mothers detected an increased eagerness in their children to interact with others, which they attributed to extended periods of isolation and little to no contact with individuals outside the home. Other mothers commented on how COVID-related school disruptions had strengthened their child's relationships with family members. Mother #12, who was

not working outside the home at the time of the interview, and whose child attended kindergarten online, explained, 'It has definitely made him draw close to the family. He was already close to us, but it has given him more [of] a support system. He knows we're there. Even though times are inconsistent, he sees that we're consistent'.

**3.1.2 | Social impacts: Negative**—More commonly, mothers described negative social impacts of the pandemic for their child, including interactions and relationships with other children and with adults, pertaining to the subthemes of (1) challenges initiating and sustaining peer relationships and (2) experiencing isolation.

Many mothers described negative impacts on their child's experiences initiating and sustaining peer relationships. Some mothers attributed such challenges to physical distancing mitigation efforts and to online learning conventions that were not conducive to fostering peer interactions or friendships. For example, Mother #5, who had left her employment to care for her daughter and support her online schooling, described the impacts on her daughter's friendships with classmates, commenting, '[I] don't think she really sees her classmates as friends as she would if she were in-person with them'. Some mothers specifically mentioned that during virtual schooling sessions, students had to remain muted, which did not allow their children to engage in sustained interactions with peers. Other mothers described how the structure of virtual schooling provided no opportunities for their children to engage with classmates socially.

Another common theme pertained to negative impacts on children seeking out any social interactions. Some mothers noted their children had become more isolated, such as by spending more time alone in their room. One mother of three who worked full-time whilst her son attended kindergarten online (Mother #3) mentioned that her child experienced a setback in social skills due to school closures, saying, 'I just feel like COVID put a huge setback with him...So, he's having to learn these social developments all over again'.

### 3.2 | Impacts of the COVID-19 pandemic on behavioural aspects of mental health

When asked about the impacts of the pandemic on their child's behaviour, several mothers described negative impacts, corresponding to the themes of (1) challenges focusing and paying attention, (2) challenges following rules and (3) increased negative interactions.

**3.2.1 | Challenges focusing and paying attention**—Children commonly experienced difficulty engaging and remaining attentive during virtual learning sessions, with many mothers indicating their child was unable to sit still or pay attention to lessons. Other mothers mentioned how their child would engage in off-task behaviour, such as playing with other toys. Mother #4, who reported not being able to work whilst her two children attended school virtually, commented, 'He's not focused. And because he's not paying attention and he's not into it, he [would] just completely be off task...Being at home, it was really a struggle for him'. In general, mothers expressed that they were sympathetic to or understood why their child was experiencing difficulties focusing and being attentive, citing that virtual learning expectations were not reasonable for young children.

**3.2.2 | Challenges following rules**—Many children experienced difficulty with rule-following behaviours. Some mothers specifically mentioned noticeable difficulties following teachers' rules and directions in virtual contexts as opposed to in-person contexts. Mother #2, whose child attended school virtually, said, 'He ain't got to do anything that the teacher tell[s] him to do because he's not actually with the teacher. So it was kind of hard'. Other mothers described how they had noticed changes to their child's rule-following behaviours in public settings or that their child had exhibited greater difficulty following rules at home than prior to schooling disruptions.

**3.2.3 | Increased negative interactions**—Some mothers perceived that schooling disruptions had contributed to an increase in their child's engagement in negative physical interactions with others. Some examples included an increase in fighting between the child and their siblings or between the child and their parents. One mother of four who worked part-time (Mother #18) explained, '...she starts a lot of fights with her sisters, tries to start fights with me and her dad. Yeah, she's gotten, I think, more... What is the word I'm looking for? Aggressive in that way, a little bit more demanding, and she seems to have lost a little bit of her patience. Especially when we were on lockdown, she was not as patient with situations as she usually is'. None of the mothers described perceived positive impacts of the pandemic on their child's behaviour.

### 3.3 | Impacts of the COVID-19 pandemic on emotional aspects of mental health

Mothers almost exclusively described the negative impacts of the pandemic on their child's emotional health, corresponding to the themes of (1) worsening affect or heightened emotional reactions and (2) loss of interest.

**3.3.1 | Worsening affect or heightened emotional reactions**—Several mothers described greater fluctuations in their child's mood or explained how their child would become upset over issues that had not previously posed challenges. In describing her son's heightened emotional reactions in response to virtual schooling challenges, Mother #9, who worked 45 h per week at a fast-food restaurant, explained, 'When he cannot do it or he cannot connect [to] it, he was throwing away everything like books, pencil, crying. And then he calms down, and he come[s] on in and then he's getting angry, he's a little broken there...'

Other mothers described that their child's emotional reactions to situations had intensified or that existing mental health issues had become exacerbated. Still, others described their child's overall effect as worsening as evidenced by crying, tantrums or general displays of irritation. Mother #1, whose child attended kindergarten virtually, indicated, 'And then we've noticed that she gets angry a lot easier now. She gets irritated really quick'. Notably, several mothers specifically described that their children had experienced increased levels of stress, anxiety or depression. Mother #20 explained, 'I felt that she had a little bit of depression or anxiety...She would just want to be like laying down using her tablet or watching TV'.

**3.3.2 | Loss of interest**—Several mothers described changes in their child's interests, some describing how their child had lost interest in certain activities that they previously

enjoyed. Other mothers said that their child had lost interest in school itself, once the learning format shifted from in-person to virtual. Mother #4 stated simply, 'Honestly, as far as learning, he actually seemed like he's not interested no more. He was interested when he was in person'. None of the mothers indicated that their child was excited about or interested in attending school virtually, and none felt that the pandemic had a positive impact on their child's interests. Overall, none of the mothers described perceived positive impacts of the pandemic on any aspect of their child's emotional health.

## 4 | DISCUSSION

Mothers with low income who had kindergarteners during the 2020–2021 school year described several impacts of the COVID-19 pandemic on their child's mental health. For social impacts, although some described no change or positive changes, including strengthened family relationships, mothers largely described diminished opportunities for their children to create or maintain friendships and decrements in social skills. For behavioural impacts, mothers reported reduced engagement in school activities and poorer rule-following at home and school, whilst some reported heightened aggressive behaviours. For emotional impacts, mothers described negative impacts on mood, emotional reactivity and frustration tolerance, as well as symptoms of anxiety and/or depression. No mothers reported positive changes to behavioural or emotional aspects of mental health.

### 4.1 | Social aspects of mental health

Our findings suggest the importance of creating intentional opportunities for children to create and maintain friendships. Prior research with preschool-age children from households of low income indicates that positive engagement with peers in the classroom is associated with the development of both language and self-regulation skills over the preschool year (Sabol et al., 2018). It is likely that children in our sample (all of whom experienced schooling disruptions during the latter part of their preschool year and during their transition to kindergarten) missed opportunities to engage with their peers during a formative period for language and self-regulation skill development. Thus, providing intentional opportunities for children to practice engaging positively with their peers in contexts where they routinely interact (Bronfenbrenner & Morris, 2006), should be a priority. In the context of school, early childhood education (ECE) professionals should be aware of the need to ramp up support for children's social skills to address missed socialisation opportunities during periods of schooling disruptions. Recommendations for ECE professionals include working to foster a cooperative and accepting space for children to practice social interactions, intentionally teaching social skills and emotion regulation skills through books, songs and other materials, and modelling and prompting social interactions, and providing support during peer interactions (ECE Resource Hub, n.d.). In our study, mothers who reported no or positive effects of the pandemic on their child's social skills also tended to describe that their child was able to maintain existing friendships or strengthen relationships with family members. Indeed, positive and supportive parent–child relationships have been identified as a protective factor for fostering family resiliency (Benzies & Mychasiuk, 2009) within the bioecological model of development (Bronfenbrenner & Morris, 2006). Importantly, several mothers reported experiencing stressors that tend to co-occur with low-income status which



might reduce the amount and quality of interactions with their children. Examples include an employment change, such as being laid off or experiencing a reduction in work hours, living in a single-parent household or living in a household with more children under the age of 18 years than adults. It is possible that not all families from households of low income have the resources or time to devote to fostering peer relationships or to ‘filling in gaps’ in socialisation that their child would have experienced in a pre-pandemic kindergarten classroom. Some concrete strategies parents can use to build resilience within daily routines include creating time for conversations during mealtimes, being present and engaged in interactions and modelling good listening skills, as well as encouraging children to enjoy the company of their peers, such as through outdoor playtime (Cluff, 2022). Research and programmes directed towards building resilience and supporting parent–child and peer relationships are thus key targets for future planning.

#### 4.2 | Behavioural and emotional aspects of mental health

Our findings for the 2020–2021 school year are consistent with a systematic review of 116 studies conducted between January and November 2020 reporting observed increases in symptoms of depression and anxiety and worsening mental health in children and adolescents, as compared to pre-pandemic (Samji et al., 2021). Our study extends these findings through the lived experiences of mothers with low income through their descriptions of mental health impacts well into the 2020–2021 school year, months after initial pandemic-related school disruptions had begun.

These findings are concerning given that kindergarteners perceived by their teacher to display disruptive behaviours or social–emotional skills inconsistent with the classroom environment are subject to exclusionary discipline practices that may further limit their engagement in social and academic learning opportunities and exacerbate challenges (Williford, Alamos, Whittaker, & Accavitti, 2021; Williford, Alamos, Whittaker, Accavitti, & Robinson, 2021). ECE professionals can implement evidence-based practices to proactively support the development of social, behavioural and emotional skills, including providing clear expectations and routines, helping students work through strong emotions and understanding diverse cultural and family values to support social problem-solving skills (Williford, Alamos, Whittaker, & Accavitti, 2021; Williford, Alamos, Whittaker, Accavitti, & Robinson, 2021). Schools should also prioritise school-based mental health services by strengthening assessment, referral and intervention measures to support children in partnership with families (Childs et al., 2022; Pattison et al., 2021; Watts & Pattnaik, 2022). Early childhood mental health consultations represent one such option to support children's healthy social, emotional and behavioural competencies, wherein consultants collaborate with ECE professionals and families to address areas of most pressing need (e.g., behavioural challenges and forming peer relationships) (Downer et al., 2018).

#### 4.3 | Limitations and future directions

Although studies addressing child and family experiences during the early stages of the pandemic have been highly informative, continued research addressing dynamic, non-linear and multilevel factors affecting children during (and after) the pandemic is critical to understand long-term effects, the complex set of stressors that may spur issues in social,

behavioural and emotional aspects of mental health, and the mechanisms underlying such stressors (Wade et al., 2020; Wade et al., 2023).

We acknowledge as a limitation of the study that interviews may not capture all pandemic-related impacts on children's social, behavioural and emotional health. Additionally, interviews reflected only mothers' perspectives, which may be different from the perspectives of the child, the child's father and other caregivers. As is true of qualitative research, it is not possible to draw inferences about the prevalence of maternal perspectives on children's experiences or the generalizability of study findings. However, hearing the perspectives of mothers from households of low income with varying experiences during the pandemic helps in understanding more about what they experienced and why their experiences were challenging; these details and stories can also inform future research concerning factors and processes that have exacerbated and mitigated the impact of the COVID-19 pandemic on young school-age children.

## 5 | CONCLUSIONS

Findings suggest that mothers with low income perceived several negative impacts of the COVID-19 pandemic on social, behavioural and emotional aspects of their kindergartener's mental health during the 2020–2021 school year. It is possible that the persistent disruptions families of low-income backgrounds have experienced thus far will continue to shape young children's mental health trajectories over the long term. For ECE programs that serve families in low-income communities, findings also suggest the importance of providing resources and mental health referrals to families who would benefit from additional support. Commenting on the pandemic's impacts on her child's mental health, one mother explained:

‘... honestly, from the very beginning, if they had given citizens an option, “Hey, do you want to risk your physical health to protect you and your children's mental health? That's up to you,” I would have chosen mental health. I would have chosen to get out there and stay social, and I would have rolled the dice, for me and my children’.

(Mother #8)

No one should have to ‘roll the dice’ when faced with continuing or future public health issues. Thus, it is critical that we plan for how to support children's mental health to navigate current and future pandemic-related disruptions. Implications for future planning include fostering positive relationships with those individuals with whom children interact regularly in proximal settings. In the home, this could include encouraging family members to dedicate space and time to be present and intentionally engaged in daily routines, and encourage positive peer play. In school settings, recommendations include modelling, supporting and intentionally teaching about social and emotion regulation skills, as well as strengthening assessment, referral, and intervention efforts to support children through collaborations between families, ECE professionals and mental health consultants.

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## DATA AVAILABILITY STATEMENT

Per the informed consent agreement, raw interview data collected for this research study are not publicly available to protect participant confidentiality and privacy. We recognize the importance of and are committed to the principles of data transparency. Thus, researchers interested in accessing the de-identified and aggregated dataset may contact the corresponding author to discuss data sharing possibilities, subject to Institutional Review Board approval.

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TABLE 1

Interview guide questions for current study.

Topic area	Example questions and prompts
Overview	<ul style="list-style-type: none"> <li>We are interested to learn more about changes to children's childcare and school experience due to COVID-19. We are also interested to learn about the positive and negative effects of these changes on children's relationships with other children and adults, their learning and development and their mental health (such as their mood).</li> </ul>
Childcare and schooling prior to pandemic	<ul style="list-style-type: none"> <li>First, I would like you to think back to January 2020 (before the COVID-19 pandemic) and tell me what [child's] childcare or school experience was like.</li> </ul>
Pandemic-related childcare and schooling changes prior to kindergarten	<ul style="list-style-type: none"> <li>Now thinking about the period between when the COVID-19 pandemic began (in March 2020) until just prior to the beginning of [child's] kindergarten year, what changes to childcare and school did [child] experience?</li> </ul>
Childcare and schooling experience during kindergarten	<ul style="list-style-type: none"> <li>Let's turn now to [child's] kindergarten year. Would you describe for me what [child's] childcare and school experience was like when kindergarten began and whether there were any changes during the school year?</li> <li>If there was a change in schooling structure, probe for when this happened and how (e.g., Was it a gradual change? How and when did they return to face-to-face instruction? Were there different options offered, such as virtual-only instruction?).</li> </ul>
Social impacts	<ul style="list-style-type: none"> <li>How would you say these changes have impacted [child's] relationships, with other children and adults, or how [child] gets along with other children and adults?</li> <li>Probe for positive and negative impacts, if needed.</li> <li>Can you think of any stories or examples?</li> </ul>
Behavioural impacts	<ul style="list-style-type: none"> <li>Now thinking about [child's] behaviour, how have these changes impacted [child's] overall behaviour (such as following rules and doing what you and others expect)?</li> <li>Probe for positive and negative impacts, if needed.</li> <li>Can you think of any stories or examples?</li> </ul>
Emotional impacts	<ul style="list-style-type: none"> <li>With all of these changes, let's think about the area of mental health, such as [child's] mood. How have childcare and school changes impacted this area?</li> <li>Probe for positive and negative impacts, if needed.</li> <li>Can you think of any stories or examples?</li> </ul>

TABLE 2

Participant demographic information.

Characteristic	Frequency (percentage)	Mean (SD)
Completed in-depth interview	22	
Maternal age at in-depth interview		
<30	5 (22.7)	
30–34	7 (31.8)	
35–39	7 (31.8)	
40–44	3 (13.6)	
Maternal race/ethnicity		
Hispanic, of any race	8 (36.4)	
Non-Hispanic, Black or African American	9 (40.9)	
Non-Hispanic, White	5 (22.7)	
Maternal formal education attainment		
Less than high school diploma	1 (4.5)	
High school diploma or GED	6 (27.3)	
Some college	8 (36.4)	
College graduate	6 (27.3)	
Graduate school	1 (4.5)	
Family income		
Less than \$20,000	3 (13.6)	
\$20,000–\$49,999	12 (54.5)	
\$50,000–\$79,999	7 (31.8)	
Income status		
<Federal poverty level for household size; 2021	4 (18.2)	
<200% Federal poverty level	12 (54.5)	
<225% Federal poverty level	3 (13.6)	
<250% Federal poverty level	3 (13.6)	
# Adults living in home = 1	6 (27.3)	
# Children living in home > # adults	9 (40.9)	
Maternal employment hours or status affected during the pandemic (e.g., laid off, reduced hours, work location and business closed)	7 (31.8)	
Family location (U.S. State)		
CA	9 (40.9)	
FL	3 (13.6)	
NJ	3 (13.6)	
MD	2 (9.1)	
NY	2 (9.1)	
IL	1 (4.5)	
OR	1 (4.5)	
PA	1 (4.5)	
Child's age in months		66.95 (1.4)

Characteristic	Frequency (percentage)	Mean (SD)
Child sex = female	11 (50.0)	
Child race/ethnicity		
Hispanic of any race	7 (31.82)	
Non-Hispanic, Black or African American	9 (40.9)	
Non-Hispanic, White	6 (27.3)	
Non-Hispanic, other race	0	
Child has an Individualised Education Plan (IEP)	5 (22.7)	
Child schooling format during kindergarten year (2020–2021)		
Primarily online	11 (50.0)	
Combination of in-person and online	7 (31.8)	
Primarily in person	3 (13.6)	
Planned homeschooling	1 (4.5)	

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TABLE 3

The impact of the COVID-19 pandemic on social, behavioural and emotional mental health: themes, subthemes and exemplar quotations.

Themes	Subthemes	Exemplar quotations (participant number)
Social impacts: Positive or no impacts	Maintaining existing friendships	'...As far as relationships go, I didn't see any of her relationships suffer. I mean, she just spoke on the phone more with her friends, but she didn't seem to be any different in my opinion.' (19) 'He's always telling me about his little buddies and this and that. I mean, maybe he had less time to form those friendships. Like, they didn't play on the playground as much and work out all the dynamics that way, like sharing and including others in the playground and doing those types of things, but I mean, he has a ton of friends...And I think they tried to do as much free time as they could in the class to facilitate friendships and everything'. (11)
	Strengthening relationships with family	'So some of the positives were, that I was able to have a more of a relationship with my kids. I was able to get to know who they really are, just because I'm a single mom, I work. So just having that time to sit down with each one of my child, and get to know who they really are, what they really like, was a huge plus'. (17)
Social impacts: Negative	Challenges in initiating and sustaining peer relationships	'At the beginning, he was fine with it, but more so six months into it when he was starting kindergarten and he saw his friends virtually, I don't really think he understood like, yeah I can see them, but I want to play with them. And he's like, mommy can we, call this person and go over? And I have to remind him that we couldn't do that. So towards the end, he was just over it. He wanted to be around his friends'. (10)
	Experiencing isolation	'So she's gotten to the point where she's more comfortable isolating herself at home or just being in her room...kind of feel she's learning to isolate herself and that's not good'. (1)
Behavioural impacts	Challenges focusing and paying attention	'So he's one of the youngest ones in his class. And I would say that became more evident those days because being online and not having the teacher there hovering over you. She would try to engage him through the computer but it was difficult, it was a struggle for him to stay focused the whole time sitting in the chair. I guess when you're in class and you're there with your friends and the teacher's there and right in front of you, it's different. And yeah, I would say he had a hard time with those days'. (11) 'It's a little harder to keep her on track. When like it's time to do schoolwork, it's hard to keep her focused on schoolwork in a home environment. She tends to get distracted, want to do other things'. (5)
	Challenges following rules	'For some kids, the remote learning was just fine, but my kid is someone I've observed. I could have it all wrong, but the way I see it, he would go to school and he would follow the rules and do the lessons because the social payoff was worth it to him. That was the trade-off. And without that, it wasn't working for him, and he was disagreeable to it'. (8)
	Increased negative interactions	'So I would get reports... He would do things like, he stepped on a classmate's fingers and he pushed the classmate or he was running around the classrooms, shouting nonsense words. I would read these behaviour charts, and I'd be like, "Oh my God." I think had there not been the social distancing and all the rules from the pandemic, I think he might've had a better or more pleasant experiences this year in terms of the behaviour. Maybe there wouldn't have been so many issues. I don't know'. (21)
Emotional impacts	Worsening affect or heightened emotional reactions	'She gets sad sometimes. She cries to go outside every day now. She just not too long ago, begging me to take her to the park. It's like outside is running away and she's not realised it. It's every day. That's mostly it. She just miss being outside and being around other kids, her age, because she says her brother doesn't play with her the way he supposed to'. (6) 'He's very whiny. And sometimes he does get a little emotional, very emotional and, we have to remind him sometimes that big boys don't cry and he, has been a little moody, he does have days where he's just very moody. That's the funny way. And I let him have those days because I'm an adult and I have those days, so I allow for that'. (10)
	Loss of interest	'They want to eventually leave the house and be with their friends and be with classmates and see other people. So I feel like if virtual learning continues with the school district, her liking school, she's no longer going to have that interest anymore. She's not going to pay attention and she's just not going to be into it'. (22)