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Parenting Practices, Technology Use, and Preschoolers' Self-Regulation During COVID-19: A Thematic Analysis

By

Rachel Katzman

A Thesis
Submitted through the Department of Psychology
in Partial Fulfillment of the Requirements for
the Degree of Master of Arts
at the University of Windsor

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Parenting Practices, Technology Use, and Preschoolers' Self-Regulation During COVID-19: A Thematic Analysis

by

Rachel Katzman

APPROVED BY:

_____

D. Kane
Faculty of Nursing

_____

K. Babb
Department of Psychology

_____

R. Menna, Advisor
Department of Psychology

September 15, 2022

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ABSTRACT

The COVID-19 pandemic has caused unprecedented challenges and as a result, the health behaviours and stress levels of Ontarian families have been negatively impacted. The purpose of this study was to explore preschoolers' self-regulation, parenting stress, and technology use in Ontario within the context of the COVID-19 pandemic. Participants included 11 parents of preschool-aged children who participated in interviews for the *Children's Technology and Media Use During the COVID-19 Pandemic* study. Five themes were generated regarding parenting stress: stress related to their added role as teachers, stress related to their parenting role, cancelled and missed events, isolation, and lack of support. In detailing their child's engagement in technology, three themes were generated: increased screen time, focusing on technology, and difficulties in emotion regulation. As a result of their parenting stress, three subthemes were generated in their parenting behaviours: using technology as a parenting tool, engaging in reactive parenting, and implementing rules for technology use. This novel study provides insight into the self-regulation of young children and how technology use and parenting stress have impacted this skill in young children living in Ontario during the COVID-19 pandemic. The results highlight the specific concerns parents have during the pandemic and the ways their children have been impacted by restrictions and increased technology use.

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CHAPTER I

INTRODUCTION

The World Health Organization (WHO) declared a Public Health Emergency of International Concern (PHEIC) on January 30, 2020, due to the global outbreak of SARS-COV-2 (COVID-19; Lango, 2020). On March 12th, 2020, all publicly funded schools in Ontario were ordered to close, and five days later Ontario declared a state of emergency and ordered several non-essential businesses, private schools, and daycares to close (Nielsen, 2021).

As the pandemic worsened in Ontario and infection rates and death tolls rose, the provincial government announced that schools would not be returning for in-person learning, continuing online education for the remainder of the school year. It was not until June 9th, 2020, that daycares were allowed to reopen with restrictions, providing childcare resources to families with young children (Nielsen, 2021). Although daycares continued to operate between 2020 and 2022, the elementary and high schools in Ontario experienced many closures and transitions between in-person and online learning for families who selected hybrid learning options (Nielsen, 2021; Ontario Newsroom, 2022).

During the COVID-19 pandemic, the Canadian population has experienced unprecedented challenges and restrictions on individual freedoms and everyday services (Marques de Miranda et al., 2020). As a result, the health behaviours, stress levels, and food and financial security of Canadian families have been negatively impacted throughout the pandemic (Carroll et al., 2020). Due to the necessity to isolate for long periods over the past two years and the increased reliance on technology, it is important to consider how children are dealing with these stressors and how technology may play a role in children's self-regulation. This study

aimed to explore preschoolers' social-emotional functioning, specifically self-regulation, parenting stress, and technology use in Ontario within the context of the COVID-19 pandemic.

Self-regulation is characterized by the abilities of compliance, inhibition, social-emotional regulation, and effortful control (Kopp, 1982). These skills relate to the overarching processes by which people pursue and attain goals (Mann et al., 2013). The development of self-regulation is characteristic of the period of early childhood (Bronson, 2000) and has been associated with more positive early child-caregiver relationships and social experiences (Kopp, 1982; Montroy et al., 2016; Silkenbeumer et al., 2018; Vygotsky, 1962, 1978). Vygotsky (1978) posited that children progress through four main phases while developing the capacity and skill set for self-regulation. As children progress through these phases, they require less instruction from caregivers, eventually resulting in the ability to self-regulate in the absence of their caregivers. Kopp (1982), who was influenced by Vygotsky, theorized that the ability to self-regulate is achieved when children can follow caregiver expectations without external monitors.

Research has also suggested that early peer relationships and interactions with early educators and teachers influence the development of self-regulation in preschool-aged children (Montroy et al., 2016; Silkenbeumer et al., 2018). Research has highlighted that children with weak self-regulation skills may be more prone to low academic achievement and externalizing behaviour problems (Ponitz et al., 2009; Raver et al., 2011). Persistent dysregulation in young children increases the risk of developing mental health problems later in life (Tremblay, 2000).

Changes within the educational and childcare systems during the pandemic have resulted in an increase in factors such as parental stress (e.g., Weaver & Swank, 2020) and screen time use in young children (e.g., Ozturk Eyimaya & Yalcin Irmak, 2020; Yang et al., 2020). This is concerning as both parental stress and screen time use have been associated with poor self-

regulation, or dysregulation, in young children (e.g., Christakis et al., 2004; Kim-Spoon et al., 2012; Landhuis et al., 2007; Swing et al., 2010). Young children, especially those with lower socioeconomic status and children with disabilities, may experience long-term consequences such as increased aggression and behavioural issues, anxiety, and dependence on technology and internet resources (Gupta & Jawanda, 2020). In addition, prolonged isolation from peers and depriving young children of social interactions may result in behavioural changes including increased aggression (Gupta & Jawanda, 2020).

Parental stress is defined as the negative psychological reactions to the various demands of parenting (Deater-Deckard, 1998). This form of stress has been suggested to result in more unpredictable and reactive parenting, which corresponds to a decrease in responsiveness to a child's physical and psychosocial needs. Parental stress therefore negatively impacts the child-caregiver relationship and the development of self-regulation in young children (Bayer et al., 2006; Conger & Donnellan, 2007; Pianta & Egeland, 1990). As a result of the pandemic, parenting stress has increased as financial and health worries have been exacerbated and social support and protective factors accessible to parents and children outside of their nuclear family have decreased (Carroll et al., 2020; Hiraoka & Tomoda, 2020; McConnell et al., 2011; Patrick et al., 2020).

As previously highlighted, over the past two years parents have reported an increase in child screen time use during the pandemic (Ozturk Eyimaya & Yalcin Irmak, 2020). This is concerning as the current research suggests that increases in screen time and the nature of the content of online material children engage with during the COVID-19 pandemic are negatively associated with a child's self-regulation, specifically inhibition (e.g., Yang et al., 2020).

The current study employs qualitative methods to explore preschoolers' self-regulation, parenting stress, and technology use within the context of the COVID-19 pandemic. The qualitative nature of this study will enable the collection of rich data about this unprecedented event in recent history.

CHAPTER II

LITERATURE REVIEW

Self-Regulation

Self-regulation encompasses the abilities of compliance, inhibition, social-emotional regulation, and effortful control (Kopp, 1982). These abilities encompass the various processes by which people pursue and attain goals, either deliberately, unconsciously, or automatically (Mann et al., 2013). Individuals are thought to be successful at self-regulation if they: (a) endorse and actively monitor their emotions, thoughts, and behaviours, (b) are motivated to minimize inconsistencies between social or institutional standards and their actual behaviours, and (c) can regulate their behaviour when exposed to temptations or barriers (Baumeister & Heatherton, 1996; Heatherton & Wagner, 2010).

Children typically develop these foundational regulatory skills before the age of six (Blair, 2002), and this form of development is characteristic of the period of early childhood (Bronson, 2000). Past research has exemplified that children can have the capacity to perceive various emotions (Frijda, 1986). Children who have attained emotional regulation can identify and manage their emotions and engage in self-regulation strategies in distressing situations. These children have been suggested to be better able to master social skills to maintain effective social relationships (e.g., Fabes & Eisenberg, 1992). In line with this, children with higher levels of self-regulation may have a better understanding of the emotions of others, potentially resulting in enhanced peer and social interactions (Trentacosta & Shaw, 2009). If skills which enable the identification of emotions are fostered in early childhood, children can utilize their skill set to regulate and reduce their problematic behaviours when faced with challenging situations (Brownell et al., 2013; Pettygrove et al., 2013, Ponitz et al., 2009).

Research has suggested several short-term benefits of effective self-regulation in early childhood. In line with this, young children's effective engagement in and development of self-regulatory skills may contribute to better school adjustment and the ability to gain more from learning experiences (Blair & Razza, 2007; Ponitz et al., 2009). For example, Ponitz et al. (2009) found that kindergarteners with stronger behavioural regulation skills at the beginning of their school year had greater gains in mathematics compared to those who were identified as less effective self-regulators. Blair and Razza (2007) had similar findings, indicating that kindergarteners who could effectively engage in behavioural inhibition had stronger mathematical skills. Self-regulation has been suggested to contribute to increased learning gains in preschool-aged children as skills such as behavioural inhibition and emotion regulation may aid children in focusing on and developing an understanding of academic tasks within a classroom setting (e.g., attending to information despite distractions; Howse et al., 2003). For example, effective self-regulation aids children in remembering and abiding by classroom rules as well as engaging in more adaptive behavioural responses (e.g., waiting their turn, raising their hand; Graziano & Hart, 2016).

In addition to academic performance, effective self-regulation has also been associated with more positive student-teacher relationships due to the increased social-emotional competence observed in these children (Pianta & Stuhlman, 2004). The development of effective self-regulation in early childhood has been associated with positive longitudinal outcomes as well. For example, young children who exhibit effective regulation have been found to have more positive peer relationships as adolescents and can manage difficult behaviours and interrelationship conflicts with close others in later stages of development (Pettygrove et al., 2013).

The negative consequences of ineffective self-regulation have also been examined. Poor self-regulation has been associated with various factors such as child maladjustment (e.g., Eisenberg et al., 2010) and delayed language development (e.g., Hanno et al., 2019; Tang & Calafato, 2021). For example, Olsen and colleagues (2016) found that preschool-age children exhibiting high levels of aggressive peer interactions evidenced lower levels of self-regulation. In turn, low self-regulators were more likely to experience higher levels of adverse parenting compared to less aggressive and better-regulated preschool children (Olson et al., 2011). Difficulties with self-regulation in preschool-aged children are also of interest as persistent dysregulation in young children increases the risk of developing mental health problems later in life (Tremblay, 2000). In line with this, research has found that problem behaviour and challenges in engaging in self-regulation in early childhood have been associated with delinquency and conduct problems within adolescence (e.g., Dishion & Patterson, 2015; Sohn et al., 2019).

Many theories of self-regulation have emphasized the development of self-regulation skills in young children as associated with parent-child interactions (e.g., Grolnick & Farkas, 2002) and early childhood experiences (Gunnar, 2003; Noble et al., 2005). The major theorists within the field of self-regulation, Vygotsky and Kopp, and several theories based on their seminal work are reviewed below.

Vygotsky

Lev Vygotsky (1962, 1978) was a cognitive-developmental theorist who posited that self-regulation development is connected to caregiver-child social interactions. Vygotsky theorized that adults aid children through directive statements and children adjust their behaviour to match their caregiver (Vygotsky, 1978).

Vygotsky (1962, 1978) posited that to develop the ability to self-regulate, children progress through four general phases where a synthesis of thought and speech occurs. Within the first phase, a child is not able to engage in self-regulation as they do not have the capacity for language and therefore are unable to comprehend that the language being spoken by their caregiver is connected to the child's activity. In the following phase, a child begins to comprehend that their caregiver's speech is related to their tasks, learning to follow their caregiver's directives. This is the first instance in which children can engage in self-regulation as directed and or modelled by their caregiver. During the third phase, the caregiver provides reassurance of appropriate behaviour or redirects inappropriate actions (Vygotsky, 1978). Within this phase, in the absence of steps provided by an adult, a child begins to exemplify self-directed control as they conduct basic functions. In the final phase, a child shifts from other regulation (assistance provided by adults) to self-regulation and can independently complete tasks and has internalized self-regulation (Bronson, 2000; Vygotsky, 1978).

Kopp

Kopp, who was influenced by Vygotsky, developed a model of self-regulation and theorized that this ability is achieved when children can follow caregiver expectations without external monitors. This process is influenced by a child's socialization and involves a shift from external to self-directed control (Kopp, 1982). Kopp postulated that changes in self–regulation in early childhood occur in concert with motor and cognitive maturation (e.g., goal-directed behaviour, representational thinking; Kopp & Neufeld, 2003). Kopp (1982) theorized that the development of self-regulation heightens between the ages of 2 and 3, coinciding with the time in which children internalize the standards for social interactions.

Kopp (1982) identified four phases of control, explaining the emergence of self-regulation skills in children, and connecting this development to the early stages of life. The first

of these stages is termed the *Neurophysiological Modulation* phase. This phase occurs during the first three months of a child's life and relates to displays of organized patterned behaviours which serve an adaptive purpose, aiding in the regulation of arousal states. Kopp (1982) suggested that caregivers contribute to this phase through their control and establishment of social interactions and routines for their child. During the following phase, *Sensorimotor Modulation,* children between three and nine months voluntarily engage with objects and signal for attention from their caregivers, being dependent upon both object stimulation and responsiveness and facilitation from caregivers (Kopp, 1982).

In the third stage, which occurs between 12 and 18 months, children gain the ability to differentiate their actions from that of others. This is noted as the *Control* phase. This is a pivotal stage in which children become capable of increasingly advanced cognitive abilities that enable them to engage in environmental exploration and language development as directed and monitored by their caregiver (Kopp, 1982). Within this stage, caregiver directives allow children to attend to socially appropriate behaviours and social exchanges enable caregivers to facilitate children's self-monitoring and acts of control. According to Kopp (1982), the compliance of children to socially demanding tasks (which require the consideration of and adherence to social norms) is the first instance of self-regulation. This has also been recognized as a primitive milestone in self-regulation development by other researchers of the infant-caregiver relationship (e.g., Ainsworth, 1971)

Kopp identified the fourth and final phase as the phase of *Self-Regulation.* During this final stage, children surpass the reliance on caregivers and have internally generated tools of control. As a result of social interactions, during which children learn the impacts of their behaviours and actions, children can develop more sophisticated skills concerning regulation in

line with social norms. This shift typically occurs when a child is three years of age and is apparent when children internalize rules of behaviour and norms (e.g., sitting still, waiting their turn), therefore regulating their behaviours independently (Kopp, 1982).

Peer and Teachers' Impact on Self-Regulation

In addition to caregivers, both teachers and peers have been found to influence the development of a preschool-aged child's self-regulation abilities. Silkenbeumer et al. (2018) conducted a study to investigate the impacts of teachers on preschool children's self-regulation development and abilities. Participants included 28 children (12 females and 16 males) between the ages of 3 and 6. These children were recruited from two German preschools and most students were native English speakers. Teachers of the participants were asked to complete the Emotion Regulation Subscale of the KIPPS-Scales of Social-Emotional Development before video-recorded classroom observations. This measure screened for social-emotional competence of the observed preschoolers. Children were then video recorded for 7 to 8 half-days, averaging 3 to 4 hours per day, during free play, structured activities, and mealtimes. Video recordings were then analyzed using a researcher-produced coding scheme reflective of an event-coding approach. Recordings of teacher co-regulation, the regulation of a child's emotions through the guidance of a teacher, children's emotions (e.g., anger, defiance), and self-regulation (e.g., ignoring a distractor) were analyzed. The results indicated that teachers engaged in more co-regulation or emotion coaching with younger preschoolers. In line with these findings, teachers engaged in less co-regulation with older children. Results also indicated that preschoolers with higher emotional intensity had a higher engagement in co-regulation with teachers (Silkenbeumer et al., 2018).

Montroy et al. (2016) conducted a longitudinal study investigating the impacts of peer self-regulation on the self-regulation of 1,386 students from preschool to grade 2 (ages 3 to 7) regarding their self-regulation and literacy abilities. Self-regulation skills were assessed using the Head-Toes-Knees-Shoulders task and early literacy skills were measured using word decoding and the Letter-Word Identification subscale of the Woodcock-Johnson Test of Achievement. The results of this study indicated that peers and those with effective self-regulation skills had a positive impact on the self-regulation of their classmates, especially those who were initially assessed as low self-regulators. Better self-regulating peers were found to influence the learning of their classmates (Montroy et al., 2016).

Previous research has shown that the abilities of compliance, inhibition, social-emotional regulation, and effortful control are influenced by early social experiences, such as those with peers and teachers, as well as through the child-caregiver relationship (e.g., Kopp, 1982; Silkenbeumer et al., 2018; Vygotsky,1962, 1978). Especially for children with weaker self-regulation skills, experiences with teachers and peers serve as an opportunity to bolster and develop their skills. These interactions have been limited due to school closures and hybrid learning models during the COVID-19 pandemic. The following literature review examines additional factors, such as parental stress, the COVID-19 pandemic, and technology use, and how they may impact the self-regulation of young children and impact their behaviours and developmental outcomes.

Parental Stress

Parental stress has been defined as the negative psychological reactions to the various demands of parenting (Deater-Deckard, 1998). Parental stress manifests in parenting behaviour through influencing the personal attributes of parents (e.g., temperament) as well as their

reactions to difficult circumstances parents may experience (e.g., child illness, disobedience; Deater-Deckard, 2004). Parental stress has been suggested to have a greater effect on family functioning and well-being than other forms of stress a parent may experience (e.g., financial and workplace stressors) and can be detrimental to a child's development (Deater-Deckard, 2004, 2005). It has been suggested that parent factors, the parent-child relationship, and child characteristics contribute to the level of parental stress a parent experiences (Crnic & Low, 2002; Deater-Deckard et al., 2005). High levels of parental stress compromise parenting behaviours, such as warmth, involvement, limit-setting, and the development of young children's self-regulation skills and overall adjustment (Kim-Spoon et al., 2012; Leerkes et al., 2016; Seay et al., 2014). Conversely, parental stress has been suggested to result in more unpredictable and reactive parenting, which results in decreased responsiveness to a child's physical and psycho-social needs (Bayer et al., 2006; Conger & Donnellan, 2007; Pianta & Egeland, 1990).

Parenting Stress and Self-Regulation in Children

High levels of parenting stress have been suggested to be an environmental risk variable when examining externalizing behaviours and the development of mental health problems in young children (Neece et al., 2012). Increased parental stress has been associated with both poor child and parental functioning (e.g., lower ratings of both parent and child psychological well-being, problematic parent-child interactions; Crnic & Low, 2002). Conversely, parents who are attuned to their child's emotions and are sensitive, warm, and express appropriate emotions around their child tend to rear better-regulated children (Eisenberg et al., 2010).

Before the COVID-19 pandemic, a wealth of research has highlighted the impacts of parental stress on the self-and emotion-regulation of young children (e.g., Benzies et al., 2004; Encinger et al., 2020; Tsoti et al., 2019). A study conducted by Neece and colleagues (2012)

highlighted the transactional relationship between parental stress and child mental health and developmental outcomes in preschool-aged children. The transactional model posits that development is the product of continuous and bidirectional interactions between the environment and an individual (Belsky, 1984; Gottleib, 2007; Sameroff, 2009). Neece et al. (2012) recruited 237 families with children, aged 3, from Southern California and Central Pennsylvania. As the study progressed, 19 families with children with developmental delays were added to the study when the entire cohort was 5 years of age. Children were assessed at a centre at ages 3, 5, and 9 years, and home visits were conducted by investigators when children were ages 3, 4, 6, and 7. At age 5, children were assessed using the Stanford-Binet Intelligence Scales. Two groups were then created: those with developmental delays/borderline (IQ $\leq$ 84) and typically developing (IQ $\geq$ 85). Families within each group completed the Child Behavioural Checklist (CBCL) to assess child problem behaviour, the Family Impact Questionnaire to assess the impact of child behaviours on family functioning, and a demographic questionnaire. Data were then analyzed through Structural Equation Modeling (SEM) to examine the trajectories of child behaviour problems and stress over time between ages 3 to 9. In addition, the bidirectional effects of parenting stress on child behaviour issues throughout the time points were examined. The results supported a transactional relationship between parental stress and child behaviour across early and middle childhood, identifying parental stress as both the antecedent and result of behavioural problems in children. This relationship was similar for both typically developing and developmentally delayed children and their parents (Neece et al., 2012).

Tsotsi et al. (2019) examined the relationship between child exuberance as a potential moderator between parenting stress and risk for internalizing and externalizing behaviour in preschool-aged children. Exuberance, the level of energy and excitement, was examined, as it is

an aspect of temperament that is related to emotion regulation, and temperament is a common moderator of parental mental health and behavioural issues in young children (Gallitto, 2015; Kochanska & Kim, 2013; Zarra-Nezhad et al., 2014). Exuberance was characterized as reward-focused behaviour of positive affectivity and decreased inhibition. Mothers and children in Singapore were recruited and 256 toddlers and their parents participated in the study. When children were 42 months, toddlers attended a three-hour neurocognitive visit to complete an experimental task assessing exuberance, using the "Popping Bubbles" episode from the Laboratory Temperament Assessment Battery adapted for preschool children (Goldsmith et al., 1999). This task was used as this measure had a low and high pleasure intensity scenario where aspects of exuberance (smiling, excitement toward the task and laughter) could be assessed and coded. In the low pleasure scenarios, the experimenter provided a structured explanation of how the child should use the bubble gun. In high pleasure scenarios, the child was asked to pop bubbles with their feet, elbows, or hands and arms in separate trials. The Parenting Stress Index (PSI; Abidin, 2012) and the CBCL were also administered. Results indicated that greater child-related maternal parenting stress was associated with greater child internalizing problems. In turn, both increased maternal parenting stress and child internalizing problems were associated with increased ratings of child exuberance. In line with previous research (Benzies et al., 2004), child-related parenting stress had a greater impact on child behaviour problems in comparison to parent-related parenting stress within preschool-aged children (Tsotsi et al., 2019).

A recent study conducted by Encinger et al. (2020) examined the relation between marginal food security and preschool-aged children's self-regulation ability, considering parental stress as a mediating variable. Participants included 249 American preschool-aged children and their families from a Midwestern state. Researchers conducted a parent interview and a direct

assessment of children's self-regulation. During the interview, parents were asked questions regarding their familial food security (e.g., "In the last 12 months, how often did the food you bought actually run out and you didn't have money to get more?") and were asked to complete the Parental Stress Index. Children were assessed by using five tasks from the Preschool Self-Regulation Assessment (PSRA; Smith-Donald et al., 2007): The Balance Beam, Pencil Tap, Tower Task, Snack Delay, and Gift Wrap. Two main patterns emerged in the results: (1) increased marginal food security was associated with higher levels of parental stress, and (2) increased parental stress was associated with weaker self-regulation abilities in children (Encinger et al., 2020). This study also identified other factors associated with increased parental stress such as diminished parental investment, reactive parenting practices (e.g., being overly critical, shouting, or yelling when upset), characterized unpredictability, abrasiveness, and less responsive parenting.

Parenting stress is of current relevance as the COVID-19 pandemic has given rise to stress in the lives of parents about their finances, social relations, and parenting roles. During the pandemic, some parents have been sequestered from their support systems due to social distancing and stay-at-home orders (Patrick et al., 2020), eliminating a factor that has been shown to reduce parental stress (McConnell et al., 2011). In addition, financial strain has been placed on families due to a lack of job security in many non-essential fields (Carroll et al., 2020), in addition to increased costs of living (e.g., gas, groceries, etc.; Buajitti et al., 2022). Parents have also been tasked with additional roles traditionally outside of their role as a parent, specifically related to education (Susilowati & Azzasyofia, 2020).

The Impact of COVID-19 on Children

The pandemic has generated new research about self-regulation, mental health, and externalizing behaviour in children, as well as parenting stress in the context of COVID-19 and corresponding restrictions. For example, Hiraoka and Tomoda (2020) conducted a longitudinal and comparative study before and during the pandemic with 353 parents and the mean age of the children was 8 years of age. During the COVID-19 pandemic time point, parents were assessed between April 29 and 30, 2020. At this time in Japan, schools were closed, and all unnecessary travel was discouraged due to government COVID-19 lockdown measures and restrictions in what was categorized as the second wave of coronavirus infections in the country (Newman, 2020). As a result, childcare centers and schools in Japan were closed because of the worsening condition of the pandemic and harsher government restrictions. Compared to the participants' pre-pandemic scores on the Parenting Stress Index Short Form, parents reported a significant increase in stress during the pandemic.

Weaver and Swank (2020) conducted a qualitative study to examine the lived experiences of 11 parents living in Southern, Midwestern, and Western states in the United States during the pandemic. Eight themes were generated from the interviews: educational experience, navigating roles and responsibilities, recognizing privilege, routine, monitoring and communication about COVID, vacillating emotions, connection, and meaningful experiences. Within this study, certain themes shed light on parenting stressors. For example, within the theme of navigating roles and responsibilities, the researchers identified unique challenges and stressors, such as coping with a loss of employment and alterations to work-life balance. It was also highlighted that some parents were able to be psychologically flexible to these life alterations and adapted to meet their situational demands (Weaver & Swank, 2020). Literature has supported this flexibility

as beneficial to parental coping skills and may buttress the mental well-being of families throughout the pandemic (Coyne et al., 2020). In addition, Weaver and Swank (2020) identified that within the theme of connections parents highlighted a loss of connection to those outside of their household, raising concerns about the possible changes to their relationships in the future.

Another study conducted by Di Giorgio and colleagues (2020) also highlighted the pandemic's impact on the emotion-regulation abilities of children. Participants included 256 mothers of children between the ages of 2 and 5 living in Italy between April 1st to 9th 2020. Sleep quality, time perception, executive functioning, and emotion regulation of both children and mothers were all factors that were assessed in the questionnaire. The results indicated that there was a decrease in sleep quality and distortion in time perception for mothers and preschoolers, along with an increase in difficulties in emotion regulation (e.g., impulse control difficulties, lack of emotional control, and lack of emotional clarity) among the children.

A recent study highlighted the impact of the COVID-19 pandemic on the acute and long-term effects of the pandemic on the mental health of children, ages 8 to 13, in Windsor-Essex County, Southwestern Ontario. Data were collected between June and July of 2020 and 190 families participated in this study. Results indicated that children experienced worsened well-being, coupled with psychological distress, in comparison to their retrospective report of pre-pandemic well-being. Both parents and children endorsed greater levels of depressive and anxiety symptoms than in pre-pandemic samples. In addition, perceived social support mitigated symptom severity in this sample (Mactavish et al., 2021).

In summary, the COVID-19 pandemic has had negative impacts on the mental health and well-being of children and parents as there are increased difficulties in child emotional regulation as well as parenting stress (Mactavish et al., 2021; Weaver & Swank, 2020). In addition, several

protective factors, such as parental flexibility and social support, have been highlighted in recent data (Di Giorgio et al., 2020; Mactavish et al., 2021). As the pandemic is an ongoing experience for families, and much of the COVID-19 research is conducted outside of Southwestern Ontario, this study sought to examine the unique experiences of families over the past two years of the pandemic within this population.

Screen Time and Self-Regulation

Screen time has been widely researched as a factor impacting self-regulation in young children (e.g., Cliff et al., 2018). Although this is currently an emerging topic in the context of the COVID-19 pandemic (e.g., Ozturk Eyimaya & Yalcin Irmak, 2020; Yang et al., 2020), in recent years, there have been increasing concerns about technology use and screen time in young children. To address this issue, the American Academy of Pediatrics Council on Communications and Media updated their guidelines and recommendations in 2016 for screen time and media use in young children. The recommendations for children between the ages of 2 and 5 included limiting screen time to one hour per day while ensuring the programming was of high quality. In addition, it was recommended that caregivers provide support to children to aid them in understanding the content they were viewing and learning the applications of the technology, gaining an understanding of their real-life applications (American Academy of Pediatrics, 2016).

Other researchers, such as Byrne et al. (2021), have shown a high use of technology in young children and screen time practices that contradict the recommendations made by the American Academy of Pediatrics. A meta-analysis of 622 journal articles examining technology use in young children identified screen time rates doubled between 2010 and 2020 for children between the ages of 0 and 6 (Byrne et al., 2021). This is concerning as increased technology use

has been associated with poorer self-regulation skills in preschool-aged children (Feldman et al., 2011; Kostyrka-Allchorne et al., 2017; McDaniel & Radesky, 2017), specifically regarding executive functioning and attention (e.g., Christakis et al., 2004; Landhuis et al., 2007; Swing et al., 2010).

Cerniglia et al. (2021) conducted a longitudinal study to examine the impacts of screen time use on the self-regulation abilities of preschool-aged children. Participants were a sample of Italian 422 children between the ages of 4 and 8 in the Northern, Central, and Southern regions of Italy. The CBCL Teacher Report Form was used to assess academic achievements and dysregulation symptoms. The CBCL was administered to mothers to measure social, emotional, and behavioural functioning in the participants. Lastly, an adapted version of the StimQ measure (Horowitz-Kraus & Hutton, 2018) assessed child technology use and maternal involvement in child screen time practices. SEM identified a significant positive association between technology use and dysregulation at 4 years of age. In addition, a greater amount of screen time at age 4 in combination with poorer self-regulation skills was associated with poorer math and literacy grades at 8 years old. Results also indicated that less maternal involvement in screen time and scaffolding was associated with greater dysregulation in children. This study exemplifies the problems that may arise from screen use in young children over time.

Yang and colleagues (2020) examined the relationship between electronic gaming and various forms of executive functioning within a sample of Chinese preschoolers aged 3 to 6. Participants consisted of 119 preschoolers and their parents from a preschool in Northern China. Children and their parents attended three sessions, each lasting 10-20 minutes during which children were administered executive functioning tasks. During the first session, children were administered the backwards digit span and spatial span task; the second session included the boy-

girl Stroop test, Simon task, and flanker task; and the final session included the Tower of Hanoi task. This study considered electronic game use time, measured by a self-report Likert-type questionnaire to assess the duration of the children's engagement on various platforms, and electronic game content through parental ratings of gaming content on a four-point scale. The study results indicated that action content in games was negatively associated with a child's executive functioning, specifically inhibition. This is of note as inhibition is a form of self-regulation (Baumeister, 2014).

Research has shown that early screen time use and media exposure at an early age can also have an impact on the developmental trajectory of a child in terms of self-regulation and executive functioning skills. For example, Cliff et al. (2018) conducted a study to examine the impacts of screen time use longitudinally between early and late toddlerhood. This study examined 2786 children at the age of 2 and 3527 at the age of 4 and 6. The study was conducted in Australia and involved primary caregivers completing weekly media exposure reports. Caregiver, teacher, and observer reports were analyzed to develop a composite measure of self-regulation for each child. The results of this study indicated that increased viewing of television and other media sources at the age of 2 was associated with lower levels of self-regulation in children at the age of 4. In line with this, at 4 years of age, lower self-regulation was also associated with high levels of total media use (e.g., electronic gaming and television viewing). However, media exposure at 4 years old was not associated with the ability to self-regulate at the age of 6 (Cliff et al., 2018).

Kostyrka-Allchorne et al. (2017) also examined the impacts of technology use on factors related to self-regulation by conducting a systematic review to examine the association between television viewing and a child's executive functioning, attention, language, and behaviour. The

review included participants younger than 14 years of age and were either correlational studies or experiments regarding television exposure on cognition, attention or play. Five online databases were used and the keywords for the authors' search included: *television, children, infants, attention, language, education, and cognition*. Based on the 8812 studies examined, executive functioning was suggested to be associated with academic success, specifically related to math and reading. In addition, increased viewing time was found to be related to attentional problems in children. Lastly, it was also suggested that the impacts of technology use may be moderated by both the media content and the demographic characteristics such as the family and the child (e.g., age of the child, family context). This study highlights the impacts of technology use on self-regulation as stronger executive functioning and regulatory skills were associated with lower levels of screen time use in children.

In line with this, Neville and colleagues (2021) examined the long-term effects of screen time use and the associations between screen time and both internalizing and externalizing behaviours in early childhood. This sample assessed a cohort of 10,172 Irish children at ages 3, 5, 7, and 9 between 2010 and 2018. Caregiver self-reports were used to report on the hours per day children were engaged in screen time and completed the Strengths and Difficulties Questionnaire to assess externalizing and internalizing behaviours. Results indicated that higher levels of screen time use between the ages of 3 and 5 were positively associated with self-regulation abilities in children, specifically internalizing behaviours. In addition, greater externalizing and internalizing difficulties at age 3 were positively associated with increased technology use at age 5. Neville et al. (2021) suggest that children with higher screen time use in early childhood may exhibit greater self-regulation difficulties as time spent with peers and parents are effectively displaced by technology use at this critical juncture.

As reviewed, previous research has highlighted the negative impacts of increased technology use on the self-regulation abilities of young children. Specifically, several studies suggest that increased screen time and media use increase difficulties in executive functioning, especially attention and inhibition (Kostyrka-Allchorne et al., 2017; McDaniel & Radesky, 2017; Yang et al., 2020). This is concerning as poorer executive functioning skills within preschool-aged children have been associated with worse academic outcomes (e.g., Cerniglia et al., 2021; Kostyrka-Allchorne et al., 2017), peer interactions and relationships (Olsen et al., 2011), and mental health outcomes later in life (Tremblay, 2000).

Theories Regarding Technology Use and Self-Regulation

In line with the results of the Kostyrka-Allchorne et al. (2017) study, several theories hypothesize the reasoning behind the potential negative effects of screen time use. The Excitement Hypothesis (Gentile, Swing, et al., 2012), the Strength Model of Self-Control (Baumeister et al., 2007), and the Displacement Hypothesis (Gentile, Swing, et al., 2012) all theorize why technology and screen time may have negative effects on a child's development and behaviour, specifically related to self-regulation abilities.

The Excitement Hypothesis. This theory asserts that time spent on electronics and using media may overshadow other, more developmentally advantageous, activities. This results in other activities becoming less interesting in comparison (Gentile, Swing, et al., 2012). This is postulated as television shows and online games aim to excite and entertain the viewer through attention-grabbing methods such as violence and overstimulation. Continuous exposure to this overstimulating media may cause a child to require continuous and large amounts of stimuli, and potentially action and violence, to gain their attention. This change in expectations of their desired level of stimulation may cause a stark contrast between onerous and less entertaining

tasks such as work or school, resulting in self-regulation and executive functioning difficulties relating to important tasks (Gentile, Swing, et al., 2012).

The excitement hypothesis was examined by Bender et al. (2018) who conducted a literature review to analyze the impacts of media, specifically violent media, on the levels of aggression in children. Through examining varying study designs and research areas, Bender and colleagues (2018) found that decades of research have identified violent media as a risk factor for childhood aggression. The impacts of violent content tend to be modest, though most studies reviewed agree that the effect is present (Bender et al., 2018).

The concept of violence and aggression, itself, is complex and difficult to examine when considering specific risk factors. Gentile and Bushman (2012) examined aggression and violent media in the context of the risk and resilience approach, considering several risk factors. Participants were 430 students (51% male) with a mean age of 9.7 years and their teachers were surveyed at two time points over six months. Students were asked to complete a self-report of how many fights a student had engaged in, a peer nomination measure to assess perceived aggression, a measure of physical aggression, a scenario-based measure of hostile bias, and assessments of media violence exposure, screentime, and parental involvement in media habits. Teachers were asked to complete a report of each student assessing factors such as physical victimization (e.g., gets hit or kicked by peers) and physical aggression (e.g., the child hits or kicks peers, threatens to hit or "beat up" other children, pushes or shoves peers, and initiates or gets into physical fights with peers). The results demonstrated that being exposed to violent media correlated with higher child aggression after an interval of six months, parental monitoring of media corresponded to a decrease in risk of child aggression, and a greater risk of aggressive

behaviour was common when multiple risk factors were present (e.g., physical victimization, sex of the child, hostile attribution bias, etc.).

Although violent and excessive media use is a risk factor for child aggressive behaviours, researchers have identified that these effects are more easily mitigated than other concerns (Bender et al., 2018; Gentile, Nathanson, et al., 2012). Gentile, Nathanson, and colleagues (2012) assessed 1,323 children (47% male) from 10 elementary schools in Minnesota and Iowa along with their parents and teachers to examine the impacts of adult monitoring of media through four different supervision styles: using the devices or media together, limit setting concerning the amount of screen time, limit setting about the content of the media source, and active mediation. The results indicated that establishing limits on content and active mediation aided in lowering the media violence a child viewed. In addition to lower media violence, monitoring and greater active and restrictive mediation were predictive of better grades and teacher reports of school performance.

The Strength Model of Self-Control. This model suggests that time spent with electronics and on media sources does not tax but weakens a child's ability to exert self-control (Baumeister et al., 2007). This model considers self-control as a resource capable of depletion upon repetitive exertion, suggesting this is a limited resource (Baumeister et al., 1994). In line with this definition, self-control is reduced by any act that requires the use of this skill, such as the focus on a specific task, resulting in the reduction of long-term performance within future tasks requiring this skill. In addition, socialization and collaborative tasks have been suggested to be more beneficial to a child's development of self-regulation, enabling them to observe and scaffold self-regulatory behaviours through peer and caregiver social interactions (Baumeister et al., 2007; Kopp, 1982; Vygotsky, 1978). While using technology and engaging in screen time,

children may lose opportunities to interact with others and develop self-regulation skills as their attentional efforts are consumed. In line with this, the strength model of self-control posits that technology use may result in the weakening and depletion of self-regulation and behavioural performance in young children.

This model relates to the findings of Twenge and Campbell's (2018) study on self-control and technology use. This study examined 40,337 children between the ages of 2 and 17 in the United States, measuring screen time and psychological well-being. The results of this study identified that after one hour of daily screen time, further screen time increases were associated with lower psychological well-being in children including lower levels of self-control, emotional stability, and emotion regulation. It was also highlighted that as screen time increased, there was a greater amount of difficulty in completing a task, and even the concern for the completion of the task itself declined (Twenge & Campbell, 2018). This study supports the concept of self-regulation and control in children depleting over time due to increased technology use and screen time.

The Displacement Hypothesis. According to the Displacement Hypothesis, time spent on electronics using video games, television or streaming sources displaces developmentally advantageous activities, such as time otherwise spent on activities with others, such as parents, siblings, teachers, and peers that would enable a child to develop self-regulation skills (Gentile, Swing, et al., 2012). Decreasing the time that would otherwise be spent on these developmentally advantageous activities and allocating more time to online media and screen time could result in negative factors such as dysregulation and attentional difficulties in young children (Gentile, Swing, et al., 2012).

Madigan et al. (2019) examined the relationship between screen time use and development in children. This study examined 2441 mothers and children ages 2 to 5 living in Calgary Alberta. Mothers self-reported their child's screen time and completed the Ages and Stages Questionnaire to assess developmental outcomes at 2, 3, and 5 years of age. The results indicated that higher levels of screen time were associated with significantly poorer developmental outcomes in children at all time points. Specifically, when screened for development, children with higher levels of screentime were less likely to meet average developmental milestones (i.e., communication, gross motor, fine motor, problem solving, and personal-social). These findings suggest that screen time and technology use impinge on children's developmental abilities, displacing the opportunity for them to engage in tasks that aid development (e.g., gross motor activities, practicing interpersonal and communication skills with parents and peers)

In addition to social interactions, other developmentally advantageous activities are displaced by screen time including sleep quality and duration (Carson et al., 2016). Guerrero et al. (2019) examined whether the relationship between screentime, media and content, and problem behaviours (e.g., externalizing difficulties) was associated with the amount of sleep that was displaced by engagement in technology. Participants included 11,875 children from across the United States between the ages of 9 and 10. Parents completed the CBCL to assess externalizing and internalizing difficulties and the Parent Sleep Disturbance Scale to self-report sleep duration. Results indicated that higher levels of screen time were positively associated with problem behaviours in children. This relationship was mediated by sleep duration, further supporting that technology use displaced this developmentally advantageous activity in children.

Technoference. Consistent with both the Strength Model of Self-Control and the Displacement Hypothesis, *technoference*, which is when digital and or mobile devices interrupt personal interactions or time with another individual, presents as a barrier to interaction and can diminish the frequency of activities that are important in child development. This concept was first used in romantic relationships (McDaniel & Coyne, 2016), though this form of interruption can also negatively impact the caregiver-child relationship.

For example, McDaniel and Radesky (2017) examined the impacts of technoference on the parent-child relationship. Participants included 184 pairs of heterosexual parents of children below the age of five living in a northeastern state in the United States. The Parent Problematic Digital Technology Use measure, Technology Device Interference Scale self-report measure, and Internalizing and Externalizing scales of the CBCL were used as measures for this study. The results indicated that greater problematic issues with technology use in parents were correlated with greater technoference within the mother-child relationship, resulting in higher externalizing and internalizing behaviours in children. The results also garnered further support for the displacement hypothesis as developmentally advantageous activities were displaced by technology and there was a negative impact on the quality of child-caregiver relationships, predicting difficulties in self-regulation and increases in aggressive behaviour in young children.

Screen Time During COVID-19

During the pandemic, families have reported an increase in their child's screen time (McArthur et al., 2021; Ozturk Eyimaya & Yalcin Irmak, 2020). In line with the evidence of the negative impacts of screen time on young children, the consequences of COVID-19 regarding technology use are concerning. McArthur and colleagues (2021) conducted a longitudinal study to examine the impacts of the COVID-19 pandemic on screen time use in a sample of 1333

Canadian children living in Calgary Alberts. Participants were assessed between the ages of 5, 8, and 9-and-a-half. Time points one and two occurred before the COVID-19 pandemic and the final time point, at age 9-and-a-half, occurred during the pandemic. Mothers reported on children's recreational screen time, maternal awareness of child media engagement, and maternal screen time use at time points prior to and during the COVID-19 pandemic. At the final time point, participants were also asked about the impacts of COVID-19 on their family, including resources, income, child education, and childcare.

The results supported significant increases in recreational screen time use in children compared to the earlier time point, pre-pandemic. The average screen time between ages 5 and 8 before the pandemic only increased by one hour between time points, yet during the pandemic, between the ages of 8 and 9-and-a-half, there was an average increase of 11 hours per week. The reports of screen time use only included recreational use and not technology and media used for educational purposes and online schooling. This is concerning, as developmental expectations equate to an hour increase in screen time per year as a child ages. Limit and rule-setting were also found to be associated with screen time as children with rules regarding screen use in place had 3-and-a-half fewer hours of screen time per week on average compared to those without rules. In addition, families experiencing stress related to COVID-19, specifically financial and psychological stress, presented with the highest rates of screen time use within the sample.

Ozturk Eyimaya and Yalçin Irmak (2020) conducted a cross-sectional study to investigate the correlations between parenting practices and a child's amount of screen time during the COVID-19 pandemic. Participants included 1115 parents of children between the ages of 6 and 13 who attended one of three public schools in Turkey. Participants completed measures assessing their child's screen time during the pandemic and parenting practices toward their

primary school-aged child. Results indicated that 71.7% of participants noted an increase in screen time, averaging an increase of approximately 6.42 hours a day. Several factors including gender, age, income, parental employment status, rules regarding screen time, and inconsistent parenting practices were identified as significant predictors of higher child screen time (Ozturk Eyimaya & Yalçin Irmak, 2020). This study highlighted an increase in children's screen time levels during the pandemic in addition to promoting methods of monitoring and the implementation of ground rules to support children and parents at this time.

Taken together, research on screen time in children during COVID-19 has indicated an increase in technology use for both educational and recreational purposes (e.g., McArthur et al., 2021; Ozturk Eyimaya & Yalçin Irmak, 2020). This is problematic as excessive screen time use has been associated with several negative consequences such as externalizing behaviour, poor emotional regulation, and difficulties with inhibition in young children (Madigan et al., 2019; Twenge & Campbell, 2018; Yang et al., 2020). As technology and screen time are becoming an increasing concern and further entrenched in the daily lives of young children, further research is needed to further examine this relationship and techniques that may mitigate these negative impacts.

Research Questions

The COVID-19 pandemic is a new and evolving issue, and the effect it will have on parents and their young children in Ontario has had limited research. The purpose of this study was to employ qualitative methods to examine parental stress, technology use, and preschoolers' self-regulation in families living in Ontario during the COVID-19 pandemic. Parents were asked questions about these topics through online interviews, enabling this study to explore the type of distress parents are experiencing and their impact on parenting and child behaviours.

To fill the gaps in the literature, several questions were used to guide interviews and analyses for the current study which are divided into three main groups: (a) Questions about parenting stress (e.g., What type of distress and parenting stress have parents experienced during the pandemic? What are they currently experiencing?) (b) Questions about the impacts of screen time on child behaviour (e.g., What are parents' perceptions about their children's screen time and children's behaviour?) and (c) Questions about parenting behaviours and their impacts on child behaviour (e.g., How do children's self-regulation skills change when parents are stressed in their role as a parent? How does technology relate to parenting stress and parenting practices, and how does it impact their child's ability to self-regulate?).

CHAPTER III

METHODS

Participants

Participants were 11 parents of children, ages 4 to 6 years old, living in Ontario. During the 2021-2022 school year, four children completed junior kindergarten, and seven children completed senior kindergarten. Two of these children were either partially or fully homeschooled during the past school year. The sample included parents of three 4-year-olds, six 5-year-olds, one 6-year-old, and one 7-year-old child (*M* age = 5.00, *SD*= .89). When asked what gender their child identified with, there were 5 male and 6 female children. The 7-year-old met exclusionary criteria as they were 6 years of age at the time they were recruited to participate in the interview. One child had received a diagnosis of ADHD, and no other medical or psychological diagnoses were communicated by parents within this sample. Parents ranged from 27 to 40 years of age (*M* age = 35.91, *SD*= 3.75). Parents were married, or in a common law relationship or living together. Six participants were essential workers (i.e., were required to attend work in person during provincial lockdowns) during the pandemic. Two parents reported their highest educational attainment as a high school diploma, one parent completed some college or university courses, four parents had college or university degrees, and four parents attained a graduate or professional degree. Seven parents identified as White/Caucasian, one as South Asian, one as Indigenous/Mohawk, one as Latino, and one as being of Indian and Trinidadian descent. Five children were identified as White/Caucasian, one as White passing, one as South Asian, and four as having multiple ethnicities (Latina and Canadian/German Slovenian, Italian and Chinese, Indian and Trinidadian, and Caucasian and Greek). Families were from several regions in Ontario including two from Eastern Ontario, two from Central Ontario, three from the

Greater Toronto Area, and four from Southwestern Ontario. The annual household income of families ranged from 30 to 150 thousand dollars; the majority reported having a joint income of between 46 and 80 thousand dollars.

Recruitment and Procedure

Participants were recruited through emailing families with preschool-aged children that participated in a previous quantitative study on the links between parent stress, mobile technology use, parenting behaviours and children's well-being during COVID-19 and indicated an interest in being contacted to participate in future research (Tran & Menna, 2021; REB #20-253). 152 participants indicated an interest in participating in future studies. In total, 11 parents were interviewed for the current study and all interviews were conducted between June and August 2022. The only inclusionary criteria were that participants are parents of children between ages 4 and 6 who live in Ontario and speak English.

In the previous study (Tran & Menna, 2021; REB #20-253) from which the present study recruited participants, parents were recruited through Facebook posts on an approved study Facebook page and advertisements targeting families with young children in Ontario. Those who contacted the email provided in the advertisement were screened to ensure that they were parents of children between the ages of 3 to 5 and that they lived in Ontario. Parents were then sent a unique study link to complete the 45-minute questionnaire at three time points, two months apart, and were compensated 5 dollars for each completed questionnaire. After the questionnaire, participants were asked whether they would consent to be contacted for a subsequent study.

For the current study, participants who indicated consent and interest in future studies were contacted via email and invited to participate in an interview. Interviews were conducted in a project-specific Blackboard Virtual Classroom and took approximately 60-90 minutes.

Participants were provided with a link to a temporary classroom with guest access for this interview. These interviews were conducted by the primary researcher and trained research assistants, which included the primary researcher and other graduate psychology students in the Clinical Psychology program. Interviewers followed an interviewer protocol and training included practicing all interviews with other lab members and volunteer practice participants.

Parents were emailed a consent form and a community resource list two days before their scheduled appointment. At the onset of the meeting, participants reviewed the consent form with the interviewer and were offered the opportunity to ask any questions regarding the study or consent process. Participants were asked to provide verbal consent to participate in the study and to be audio and visually recorded. Interviewers recorded this consent process and participants chose whether they wanted to have their cameras on during this process. The interviewer then administered a brief demographic questionnaire before beginning the interview. In the main interview, parents were asked questions regarding their child's behaviour and screen time, and stress within their role as a parent. Parents were also asked to share changes in their lives due to COVID-19 and stressors that may have impacted their children and their parenting behaviours.

This thesis is part of a larger funded study of COVID-19, technology use, and children's mental health (Menna & Babb; WE-SPARK Igniting Discovery grant) and funding was available to compensate participants with 20 dollars for their time through a virtual gift card to Amazon, Indigo, or Tim Horton's following the completion of the interview.

Measures

Demographic Characteristics

At the beginning of the interview, participants were asked several questions that pertain to their demographic characteristics and that of their child, such as "What city or region do you

live in? “, “What is your child’s age?” and “What is your ethnicity and that of your child?”. A question regarding their family income was also asked to categorize their socio-economic status. In addition, questions regarding COVID-19, such as “Are any people living in the home an essential worker?” and “If yes, do they come home each day?” were asked to assess any unique and stress-provoking experiences during the pandemic which may be unique to the participant.

Semi-Structured Interview

A semi-structured interview was developed for the larger study on *Children’s Technology and Media Use During the COVID-19 Pandemic* study. The interview asked participants about stressful events, parenting-related stress, their child’s behaviour and school experience, and their own and their child’s technology and media use. For this study, three areas were used to address the study research questions (a) Questions about parenting stress (b) Questions about the impacts of screen time on child behaviour (c) Questions about parenting behaviours and their impacts on child behaviour

Parenting Stress. Parenting stress was examined about parenting roles and increased stress caused by the COVID-19 pandemic. To form a better understanding of the personal experiences and forms of stress impacting participants, several questions were asked, such as “Has your role as a parent changed as a result of the pandemic? If yes, how?” and “What are some examples of parenting-related stress you have experienced during the pandemic?”.

Externalizing Behaviour in Children. Numerous questions were asked of the participants to assess dysregulation and externalizing behaviours exhibited by their child. In line with this, parents were asked broad questions, such as “Have there been changes in children’s behaviour during the pandemic? Please provide some examples of these changes.” and “Which of these changes do you think was the most difficult for your child? Please tell me about it.”.

Technology Use and Screen Time. Several questions were asked to gain insight into the impacts of screen time use during COVID-19 and behavioural changes surrounding technology use. Child technology use was examined through questions such as "What changes have you noticed in your child's use of technology and media during the COVID-19 pandemic?", "Do you think your child's behaviour changes when using technology?", and "Do you think your child's ability to concentrate and pay attention changes when they use technology?". Parent technology use was also explored through questions including "How did you typically use technology in the home before the COVID-19 pandemic? How has the way you use technology changed during the pandemic?", "What changes have you noticed in your use of technology and media related to parenting during the Covid-19 pandemic?", and "What types of activities do you do while using technology around your child? How does your engagement in these activities impact your child?"

Qualitative Data Analysis Approach

Interviews were analyzed by the first author, a Master's student in clinical psychology, and the supervisor of this master's thesis. Parent interviews were transcribed by the primary researcher and a trained undergraduate research assistant. To analyze the data, a reflexive thematic analysis (RTA) was utilized, in line with the method designed by Braun and Clarke (2019). RTA is a form of qualitative analysis that considers research to be a dynamic process and allows for the identification, organization, and interpretation of patterns of meaning. The analysis is an iterative process guided by research questions and theory (Braun & Clarke, 2019, 2020).

A thematic analysis focuses on identifying meaningful patterns within a dataset (Braun & Clarke, 2006). Specifically, an RTA is implemented in such a way that emphasizes transparency and theoretical knowingness. In line with this, researchers engaging with data must be fully

aware of the theoretical assumptions and philosophy which inform their use of the method and requires transparency throughout the analysis (Braun et al., 2017). When conducting a reflexive thematic analysis, the researcher is required to continually question and revisit assumptions during the interpretation and coding of the data (Braun & Clarke, 2019). RTA is ideal for this as it allows for the exploration of participants' varying experiences, behaviours, and perspectives during COVID-19. Conducting a thematic analysis allowed for the examination of experiences within a specific timepoint, unprompted by restrictive answers.

A social constructivist lens was used as an approach when conducting the RTA. The social constructionist approach posits that several versions of truth exist, positioned in time and place. In line with this approach, discursive practices, such as utilizing language as a form of meaning-making, are the main form of inquiry (Burr, 1995). This is particularly relevant to and a fitting approach for this sample as people within the same area may have diverse experiences during the pandemic due to differing job expectations and exposure levels and exposure levels of their children within an online or in-person educational environment.

RTA Phases

In conducting the RTA, the researcher followed the six-phase approach to conducting thematic analysis created by Braun and Clarke (2006): becoming familiar with the data, generating initial codes, searching for latent themes based on clusters of conceptually similar manifest codes, revising themes, and determining a prototypical label for the themes, and producing a report that identifies theme interconnections. This method allowed for the identification and organization of patterns of meaning within the transcripts.

Becoming Familiar with The Data. In the first phase of this approach, the primary researcher either conducted or transcribed each of the 11 interviews used for this analysis. The

transcripts were then formatted into Microsoft Word documents and given an identifier code. The researchers holistically read each transcript to become more familiar with the data. During this process, initial reactions to the transcripts overall were noted and documented. The specific questions guiding the interview questions were read, and emerging themes during this process were recorded and noted.

Generating Initial Codes. During this stage, the primary researcher formatted each document to allow for coding on the right side of the transcript through the Microsoft Word comment function. Through this stage, segments of each transcript were broken down into units of meaning, consisting of several sentences or short paragraphs. Each code was short and representative of a single unit of meaning. These codes and the corresponding quotes were then documented in a table for each transcript. Similar codes under each research question were then clustered to form themes and subcomponents. The primary researcher and secondary coder divided the transcripts into a group of five and six transcripts randomly and met at two time points to discuss the codes that were emerging from the data and preliminary themes.

Searching For Latent Themes. The researcher then focused on theme development emerging from the patterns in the data sets. Through this, the codes from each transcript were examined to identify latent themes within these units of meaning, composed of clusters of overlapping codes previously indicated. To aid in theme development, codes were documented throughout, and notes were taken to determine relationships between repeating and similar codes.

Revising Themes. As the process continued, codes and themes were revisited and compared to ensure that themes continued to accurately reflect the dataset. During the second meeting between the primary researcher and secondary coder, the themes present in the latter six transcripts were discussed. In addition, the researchers re-examined the first five transcripts to

ensure that the themes were reflective of the entire dataset. During this phase, themes that did not fit the data well were reviewed and reoriented to best capture the data. The goal of this phase was to ensure that no themes were misrepresented.

Determining a Label for Themes and Producing a Report. Within the fifth phase of this analysis, names were assigned to themes to best reflect the data and form a coherent picture of the participants' experiences. The names of these themes were created to capture the breadth and depth present in the data. Finally, a report was generated for the purpose of this analysis and thesis. This focused on telling the story that was generated from the data, creating a coherent interpretation of the data. Quotes that best reflected the themes were selected and incorporated into the report to provide examples of each theme and subcategory. To best represent each theme, quotes were selected with reflected the breadth and depth of each theme which aligned with each of the three overarching research questions.

Establishing Rigour and Trustworthiness

To ensure that the research conducted is rigorous and trustworthy, several safeguards were implemented by the researcher. In line with Nowell et al. (2017), the researcher understands that for trustworthy qualitative research to be conducted, the thematic analysis needs to be performed in a consistent, precise, and thorough manner. To guarantee this is achieved, the researcher engaged in detailed recording, systematizing, and disclosure of utilized methods, enabling the reader to assess the process accurately and transparently (Nowell et al., 2017). A secondary reader was utilized throughout Braun and Clarke's (2006) six stages of the analyses previously detailed, meeting to discuss findings and interpretations at each phase. Throughout the analysis, the head researcher engaged in reflexive journaling to document the emerging

themes and impressions throughout this process, establishing an audit trail simultaneously (Cutcliffe & McKenna, 1999; Morse & Richards, 2002; Starks & Trinidad, 2007).

Potential researcher influence was managed by adhering to interview guidelines and procedures, establishing rapport with interviewees, and reviewing interview videos and transcripts to ensure objectivity, regardless of COVID-19 vaccination and restriction viewpoints, was attained. The analysis was guided by the three research questions ((a) questions about parenting stress, (b) questions about the impacts of screen time on child behaviour, (c) questions about parenting behaviours and their impacts on child behaviour), though an open approach was taken within these three areas and researchers coded all concepts that generated in the interviews. Throughout data collection, transcription, and analysis the primary researcher and second coder immersed themselves in the data and read transcripts several times to ensure the data remained reflective of the emerging themes.

In line with Braun and Clarke (2019), interviews were collected and analyzed until saturation of themes was achieved at 11 participants. The concept of saturation describes the time in which no new information or themes can be deduced from a sample. Therefore, the present sample size was sufficient as repetition in themes had generated within the sample (Braun & Clarke, 2021).

CHAPTER IV

RESULTS

The results are organized thematically and are grouped into three domains based on the research questions guiding this analysis: parenting stress, children's technology use and behaviour, and parenting stress and its impact on children. Here, the findings are presented from the 11 parents of preschool-aged children. To aid in describing the results, example quotes from these interviews will be presented to provide depth and clarity for each theme and subtheme that emerged. Due to confidentiality, all detailed contextual information reported by participants could not be discussed and names and information were redacted from exemplar quotes.

Parental Stress

Parents described several experiences that contributed to their parenting-related stress during the COVID-19 pandemic. Five main themes emerged through this analysis, resulting in themes of stress related to their added role as teachers, stress related to their parenting role, cancelled and missed events, isolation, and lack of support.

Teacher Role

During the pandemic, parents took on a teaching role during online and remote schooling. They not only were required to act as an educator for their children, adding an additional role to their daily lives, but shared in the difficulties their children experienced with online education. In line with this, two subthemes emerged; having to take on the role of a teacher in addition to their parenting role and the negative experiences their children had with online school.

Taking on the Role of a Teacher. All participants either acted as an educator within their role as homeschooling parents prior to the pandemic or had this responsibility integrated into their role as a parent during the pandemic. When asked about their parenting stress within

the past few years, many participants highlighted this added role as the most prominent stress that they had experienced related to parenting. For example, one parent articulated:

> Well, I'm no longer just a parent. I'm now a parent, a teacher, and educational assistant.

In describing the duties of this role, parents who were committed to their child engaging in online education documented the hands-on nature that this role demanded. As participants were between the ages of 4 and 6, children required assistance not only in paying attention and understanding course material but in engaging in the virtual platforms themselves. Some participants aided children in using their learning platforms and instructed them in proper online class behaviour (e.g., raising a virtual hand, using the chat function, etc.). The demands of online school were difficult for parents engaging in this teacher role. One participant noted:

> Even during virtual learning, even if it's the little one, I was beside him every time, every moment so that I ensured he was staying on track, keeping listening, participating, that kind of stuff.

Difficulty with Online School. All participants had their children participate in some form of online education during the duration of the COVID-19 pandemic. Many parents discussed the difficulties their children experienced with attending to information and succeeding in online school. Parents highlighted the difficulty that online school presented for children of this age group as it was difficult to pay attention and engage with other students in an age-appropriate way. For example, one participant articulated:

> The idea of sitting down in front of a computer was just very difficult for him. Especially, the one between 3:00 to 5:00. And because it's kindergarten, he's supposed to be learning based on play.

In addition to the content and tasks, preschool-aged children were able to engage in during online school, the duration of classes and the ability for children to sit still at this age was also identified as a difficulty. In line with this, another participant explained:

> He felt, you know, restricted. He couldn't go out. It was basically everything on the computer and he was only four […] How do you expect a four-year-old to sit there for six hours a day and look at a computer screen?

Parent Role

During the pandemic, parents described how stress was placed on their role as a parent. Two subthemes emerged within participants' traditional parenting roles including having difficult conversations about the pandemic and developmental concerns about their children. Developmental concerns included worries about their child's school readiness after online school and social and emotional well-being.

Discussions about the Pandemic with Children. Participants highlighted that many children expressed concern, worry, and confusion around the COVID-19 pandemic and the resulting changes to their daily routines. In response, parents had discussions with their children and at times needed to address the concerns that their children expressed. As a result, two subthemes emerged: providing information about the pandemic and addressing their children's concerns about COVID-19.

Providing Information About the Pandemic. All parents, regardless of their opinions on the COVID-19 pandemic and associated restrictions, were tasked with moderating information and explaining the events that were occurring in their communities. Many children were confused about the changes that were occurring in their lives, and parents aimed to provide a rationale to help their children comprehend the consequences of the pandemic, including loss of

activities, contact with friends, and access to services. Having to provide information to these children about why they had lost opportunities and various familiarities caused parents stress in their role as a parent. One participant stated: “Just kind of the stress related to explaining and to them *why* we can't go out and *why* we can't do this even though we were before.” In addition to explaining the changes that were occurring in the lives of their children and families, parents also aided their children in understanding the virus COVID-19 and how this illness could be spread to and impact them. For example, a participant explained:

> As a parent you know sometimes it's very hard to explain to the kids. You know the gravity of the whole thing. COVID. You know the hygiene practice the effects. Because why did it happen? From where did it happen and you know there were so many questions they have.

Addressing Children’s Worry and Stress. In addition to providing information about the COVID-19 pandemic and virus, parents also were tasked with addressing their children’s worries and stress related to COVID-19. Many of the young children expressed their worry about themselves or others contracting the virus and parents found it difficult to ease their concerns. One participant explained:

> It was always like a constant. “Well, what if I get COVID?” What… like just being extremely scared of like catching it right? And that was just kind of, you know upsetting as a parent to have to explain to her.

Parents also detailed the struggle with addressing and explaining the uncertainty of the pandemic and changing rules and restrictions which impacted the daily lives of the preschoolers. For example, a participant stated: “The most difficult was answering *when* would we be able to

do this so “Okay, I cannot do this today or the next week, but when is COVID going away?” Or when am I you know, “when are you going to allow us to do that?”

Developmental Concerns. Various developmental concerns related to behavioural, academic, and social development were raised by participants. Parents who saw these changes and concerns in their children were often unsure of the cause of these behaviours. For instance, one participant expressed: “I feel like sometimes there was like temporary changes […] It was hard to tell sometimes whether it was a cognitive or change like developmentally or whether it was a result of just everything going on.” Several participants detailed this uncertainty as being related to the novel and unique circumstance of raising a child during the pandemic presented. A participant explained:

> Not knowing whether his struggles were normal or because we weren't doing something right, because of the pandemic. And not having a guidebook, a playbook. Not having anyone to go to for advice because nobody had gone through a global pandemic with the three-year-old in our family that would be able to say, “here is some great tips”.

Cancelled and Missed Events

One of the most prominent changes in the lives of the young families examined was the abrupt and at times long-standing cancellations and changes that occurred during the pandemic. When restrictions were in place, many children and families lost access to activities, resulting in changes to their routines. One parent stated: “She was in swimming and that had to be cancelled and everything else. Like no parks, no, you know grocery store visits. It was all a completely new experience, so that was very stressful.” In addition, when unexpected or important events occurred, such as birthdays and funerals, families were no longer able to come together to mark these occasions. For example, a participant shared: “We had two deaths in the family […] And

that we weren't able to attend funerals or anything like that." As restrictions were lifted and reimposed, children continued to have major life events and celebrations cancelled unexpectedly. Another participant explained:

> We booked a party place for her because you know she had a few friends from school. But then we had to shut down in January again […] So we planned everything and then she was kind of sad like this is her big 5 and you know and all that and she was excited about it because she knew her friends for the first time. So that was one stressful event

Isolation

All families interviewed recounted experiencing isolation over the course of the pandemic. Participants detailed the loss of common opportunities they had to socialize with community members, friends, and family because of COVID-19 restrictions, vaccination beliefs and status, and family health concerns. Specifically, this theme has two subthemes: isolation experienced by the child and isolation experienced by the parent.

Isolation of the Child. Many participants highlighted the various ways their children experienced isolation during the COVID-19 pandemic. It was challenging for families to provide social opportunities for their children during lockdowns and when they had concerns for their health and wellbeing. A parent explained: "The social aspect for children is basically the hardest part. It's even difficult *now* to get together with friends because everybody's, it's still out there. It's still a concern. The current strain we're under is the most easily transmissible, so it's, it's a huge social impact for my kids."

During the first year of the pandemic, many participants noted that their children were only exposed to small groups of close family friends (i.e., bubbles) and family members. This

was difficult for children as social interactions were more limited or detailed as dissimilar from what they would experience with peers or friends. For instance, a participant detailed:

> That was her only other sibling that she could play with. And we like again, we didn't have any other siblings, […] we didn't have any other kids and there was no one really on the street they could hang out with.

Several participants also highlighted interactions with relatives outside of the nuclear family and more vulnerable family members, such as grandparents, were limited when families experienced more COVID-19-related stress (e.g., lockdowns, prior to vaccination, etc.). Many grandparents who commonly interacted with and supported families had long periods of not being able to maintain in-person relationships with their grandchildren and care for children. One participant detailed:

> I guess another stressful event would be, because of lockdown, being not able to see their grandparents for extended periods of time […] We live in the same town like we are a 15-20 minute walk to either grandparents. So it's kind of a shock when you can't see them for more than a week.

Isolation of the Parent. Parents also expressed having their own experiences and challenges with isolation. Like children, many of their in-person social interactions, including work and hobbies, were unable to be maintained or moved to an online format during the pandemic. For example, a participant explained: “For like a long time didn't see like other adults at all. […] And so it was hard being alone all the time.” Participants also lost social interactions outside the immediate family (e.g., visitations with friends and parents) that commonly occurred before the pandemic. One participant stated:

> I think everybody probably feels the same way, having everything shut down. That was really hard because a lot of social aspects were affected, so you know meeting with people. You know advancing our careers, for example. Everything was kind of put on hold because of the pandemic.

Lack of Social Support

Lastly, parents highlighted that having a lack of social support and connection increased their parenting-related stress. During the pandemic, the support systems families had in place, whether that was babysitters, families, or community resources and services, were inaccessible or limited. One participant explained:

> We don't really have any family supports that are close […] Then some of the family that was didn't feel comfortable with like visiting or things like that. So, like not having any breaks in the past two years.

In line with this, parents' resources and support related to childcare had changed over the course of the pandemic. This added to the burden the pandemic presented while at the same time decreasing the support and factors that relieved the demands of their parenting roles. For example, a participant explained:

> Just not being able to have anybody to take the kids. Nobody I could really ask to watch them if I needed a break. Well, you know, it was me. And that's basically it. You know, you were forced into burnout and there was really no choice around that.

Summary

In summary, there were a variety of stressors that parents experienced during the COVID-19 pandemic. Parents found it difficult to adapt to teaching their children at home in addition to the extra concerns they faced within their traditional roles as parents, including

managing their children's anxiety and behavioural changes. Parents and children experienced disruptions to their routines throughout the pandemic, cancelling events and activities that enhanced their daily lives. In line with this, isolation for both them and their children was also a parental stressor, impacting parents' sense of well-being and sequestering themselves from the support systems that helped them manage their responsibilities as parents before the pandemic.

Children's Technology Use and Behaviour

The second research question related to children's technology use and associated behaviours during the COVID-19 pandemic. In detailing their child's engagement in technology, three themes emerged: children having increased technology use over the course of the pandemic, focusing on technology, and difficulties in emotion regulation.

Increased Technology Use

All participants indicated that technology use had increased in some way for their children during the pandemic. Children needed to use technology for school, either through a hybrid learning model or when there were shifts to online schools during provincial lockdowns and school closures. In addition to education, parents also identified their children's recreational screen time use had increased. One parent described: "The only way I think it really changed is it increased because there was nothing else to do during lockdown."

This increase in technology use emerged due to increasing demands on the lives of parents and limited alternative activities when restrictions were first enforced. In line with this, most parents viewed the increase in screen time for their children as negative. One parent stated: "During the pandemic, our screen time increased a lot from what I would have previously liked to have done as a parent."

Children's Focus on Technology

When describing their children's engagement in technology, nearly all participants described that their children were extremely focused on the technology they were engaging in. Regardless of the form of technology, whether it was a tablet, television screen, or gaming system, parents noticed that their children's attention was held. One parent detailed: "She's engrossed in it, and she wouldn't even know that we exist." Many parents explained that their children were focused on the technology they were using so much that it was difficult to get their attention away from the screens and have their children respond and understand them. For example, one parent stated: "If I'm calling, I don't exist […] Like a fire could break out next to them and they probably wouldn't even notice."

Emotion Regulation

Many participants described their children having difficulty regulating their emotions when engaging in technology related to entertainment and online schooling. These difficulties were observed when their child wanted to engage in technology, was actively engaged in technology, and when being told to stop using technology. Overall, two subthemes emerged: children displaying signs of irritability and having what parents described as meltdowns.

Irritability. Parents reported that children showed several signs of irritability because of increased technology use. This emerged mainly within family and sibling relationships. For example, one parent stated: "I feel like they are just more like argumentative with each other, like hyperactive." Participants also noticed irritability in their children's daily moods and reactions. One parent explained:

> She kind of like all throughout the pandemic […] Just getting more frustrated easily. That's the main thing I can think of. Just getting more flustered easily, just not being able to take a breath and calm down […] Not as good of emotional regulation."

Meltdowns. Lastly, several participants also noted emotional outbursts that were commonly described as meltdowns. They perceived these meltdowns as being a result of their children's technology use. These episodes were detailed as crying spells where the children became overwhelmed or upset with the situation. One parent noted: "He gets overstimulated easily and he melts down easier than he did before." When describing these meltdowns, many parents mentioned that being forced to stop using technology or not being permitted to use technology when desired were catalysts for these episodes. For example, a participant explained:

> Sometimes they'll play like Mario Kart or something like that for like half an hour. But like shutting it off is full meltdowns.

Summary

Overall, parents involved in this study noticed an increase in their child's daily technology use and reliance on technology for either education or recreational use. This impacted parents and children as some participants highlighted the intense focus children had when engaging with technology. This was concerning for parents since it became difficult to communicate with their young children. Children also exhibited difficulties regulating their emotions when they were asked to stop using technology, resulting in irritability and emotional breakdowns that were challenging for parents to address.

Parenting Stress and Its Impact on Children

Throughout the interviews, participants described how their parenting-related stress impacted their role as a parent and their children's behaviours during the pandemic. As

mentioned previously, in their parenting roles parents had concerns for their child's well-being, family health and financial security, and experienced a lack of social support. As a result of their parenting stress, three subthemes emerged in their parenting behaviours: using technology as a parenting tool, engaging in reactive parenting, and trying to implement rules for technology use.

Technology as a Parenting Tool

For most parents, technology was utilized as a tool to provide content and entertainment for children and as a means for parents to gain support and information during the COVID-19 pandemic. There were three ways in which parents used technology as a parenting tool: as a babysitter, as a source of information, and to create and engage in online parenting or support groups.

Technology as a Babysitter. Several parents described using technology as a babysitter or distractor to relieve their parenting stress. This aided in reducing their parenting stress as it gave them time to accomplish other tasks, work, or have a break from entertaining their children. Although many parents had used this as a parenting tool before the pandemic, they noticed a shift in the content they were using to keep their children entertained. One parent explained: "Before it used to be for more educational processes. During the pandemic, it became more so like a babysitter." Most participants described instituting technology as a babysitter as not an active choice, but a necessity given the lack of support and increased demands on their parenting role. For example, one participant stated:

> It was not something that I felt I could control. It was complete and utter necessity and desperation where we had to introduce it as a babysitter.

Informational Resource. Parents also highlighted that they used technology as a resource to get information relating to parenting strategies and resources during the pandemic.

As common resources, such as Early On programs, were available previously were limited, parents searched for resources they could implement themselves. One parent stated: “I would say just more or less Googling resources that I could do on my own.” In addition, as many parents were unsure whether their own and their child’s experiences were developmentally normative or a result of the stressors of the COVID-19 pandemic, the internet became a source of information about child development and parenting strategies. A participant explained:

> I've definitely noticed an increase in my use of technology and more so like using technology to research and look up something if I'm not sure.

In addition, parents gained information about how to deal with some of the challenges their children experienced. For example, a participant detailed:

> It gave me stuff to use in the moment with my son […] I found this behaviour chart or reward chart […] Instead of you know having a meltdown and, not wanting to do something he pushes through it because he wants to earn a bee so that he can go pick one of his coins that has a reward on it.

Online Parenting and Support Groups. Lastly, as many participants were isolated during the pandemic and could no longer have the same in-person social connections, parents joined or created online groups to connect and receive support from others. These groups ranged from parenting groups to group video call meetings for personal stressors to help with the stress participants were experiencing within their parenting role. Through this, parents gained useful information about parenting, managed their stress, and validated their COVID-19 pandemic experiences, choices, and beliefs. One participant detailed:

> I think it's relying more on that Facebook group […] That definitely changed because I feel like because we were all in the same situation and there was no other outlet, we kind

> of all you know had had that faith in each other that we could provide each other advice and get help us get through this period.

More Reactive Parenting

Due to their stress, parents engaged in more reactive parenting practices. Parents described being more emotional and having less patience with their children. This commonly was defined as "being short" with their children and at times yelling at their children or spouses. One participant explained: "Not being able to go out was tough because we didn't have any way to release, you know, anger, frustration like our emotions. And it was just like you know, yelling at each other." Parents noted that this behaviour came from the immense stress COVID-19 placed on the various parts of their lives and within their parenting role. For example, one participant stated:

> It probably made me a little bit more irritable and short-tempered at home because, you know, you're constantly thinking "How am I going to pay this? How am I going to, you know, provide, or do what you're supposed to do?" Right?

Upon reflecting on these parenting behaviours, participants often felt remorse and were not proud of these actions. One participant detailed: "I don't want to be that like the parent that yells or things like that. And then because of the situation of feeling burnt out and tired, I would yell more than I wanted to."

Rules About Technology

As participants observed the impacts of their parenting stress on their children, some parents tried to institute rules about technology use, both for themselves and their children. As a result, three subthemes emerged: parent technology limits, child technology limits, and the implementation of behavioural steps relating to children's technology use.

Parent Limits. Parents found themselves engaging in more technology use around their children and noticed an impact on their children's behaviours. For example, a participant explained:

> It came a point in time where [Child's Name] would just rip my phone out of my hands (umm) and throw it. And you know the next thing she'd say was "get off of that" like "you're supposed to pay attention to me." So, I would say it negatively impacted her.

In response to these challenging behaviours and reactions from their children, some parents started to implement personal limits on their technology use during the pandemic. This included attending to their children's needs before they used technology, limiting technology use in front of their children, and being more mindful of the time spent on personal electronics. A participant stated: "I have to be very focused with what I'm doing, otherwise I try and just be on technology more at night."

Child limits. As detailed above, parents reported an increase in screen time and technology use for their children. When noticing children being deeply focused on technology and their difficulties in emotion regulation, some parents attempted to limit the screen time their child was engaging in. For example, a participant specified the signs they looked for when they needed to limit technology use:

> We've been very deliberate with it […] We actually take technology hiatuses if we feel like [Child's Name] is having trouble putting it down or obsessing about it, or asking for it a lot, or using it.

Implementing Behavioural Steps. Several parents also attempted to implement behavioural steps that would prepare their children to stop using technology or change tasks. For example, a participant explained:

> Sometimes I just try and limit their time on or I give them lots of time but then I encourage them to get off. I say, “Okay, I'm gonna get water ready and then I'm gonna go to the park” and that usually helps a lot. I'm having something to look forward to when they get off.

Although these were at times successful ways of managing their child’s behaviours, the negative moods and reactions to removing these distractors and parenting tools were challenging for parents. For example, a participant described: **“**Like even with warnings being like this is coming, we can't play like, they just, they have a hard time and it's like shut off sometimes. Because they almost like it's new and they want to just do all the things or they want new apps.”

Summary

In summary, the stress parents experienced in their role impacted children through initiating changes to parenting behaviours and parent-child interactions. Many parents used technology to inform their parenting practices including implementing technology as a babysitter, researching information, and seeking support and advice from other parents. The stress parents experienced also resulted in more reactive parenting, having less patience and engaging in more harsh parenting behaviours (e.g., yelling). The parenting stress and behavioural reactions of both parents and children also influenced some participants to limit technology use within their home as many parents connected technology use to challenges in their parenting role and child’s behaviour. To address these concerns, parents limited their own and their child’s technology use. In addition, behavioural steps such as warnings were also used to try to reduce the stress surrounding child behaviours and technology use.

CHAPTER V

DISCUSSION

The purpose of the present study was to gain a better understanding of the unique experiences and concerns of families in Ontario during the COVID-19 pandemic. Specifically, this was accomplished through exploring the types of parental stress participants were experiencing, their children's technology use and behaviours, and how parental stress was impacting their preschool-aged children. Although the COVID-19 pandemic and its impacts on children and parents have been examined over the past two years (e.g., Hiraoka & Tomoda, 2020; Weaver & Swank, 2020), this study is the first qualitative study to investigate the specific impacts of technology use and parenting stress on children's self-regulation ability during the pandemic in Ontario.

Summary of Findings

Parenting Stress

The thematic analysis revealed several factors that contributed to parenting stress including adding a new role of being a teacher, increased demands on their role as a parent, cancelled and missed events, isolation, and lack of social support. Research during the pandemic within other populations has also supported addressing children's worries and concerns about COVID-19, experiencing disruptions of children's routines, and the demands of online schools during the pandemic as parental stressors (e.g., Adams et al., 2021). To wit, Davis et al. (2021) also found that the added role of being an educator negatively impacted parents and increased their parenting stress early in the pandemic. Similarly, these parents were described as the new proxy educators and parents who detailed more difficulties helping their children with remote and online schooling and experienced more significant parenting-related stress and burnout. This

aligns with the experiences of Ontarian families of preschool children in the present study as preschoolers were not able to engage in education independently and required assistance, increasing the demands on parents.

Although taking on a teacher role and initiating conversations about the virus and lockdowns were unique to the COVID-19 pandemic, past research has suggested parent isolation and lack of support exacerbate parent stress levels (Guajardo et al., 2009). As many parents had their social networks and support systems removed or limited during the pandemic, many parents described feeling isolated and burnt out in their parenting roles. During the pandemic, Zampini et al. (2022) also found that in their Italian sample, parents who feel less supported by others and that their needs were not being met reported higher levels of parenting stress.

These findings contribute to the current COVID-19 literature by highlighting the specific concerns Ontarian families had during the pandemic within their parenting role. In addition, due to the qualitative nature of the current study, these findings support and add context to the previous quantitative findings regarding parenting stress in other populations. Finally, these results provide clarity as to why parents have been reporting worse mental health and lower levels of well-being (Patrick et al., 2020), highlighting the impacts of lockdowns, restrictions, and health concerns parents experienced during the pandemic.

Children's Technology Use and Behaviours

Regarding child behaviour and technology use, families reported an increase in technology use and self-regulation difficulties in children including irritability and meltdowns. Parents also noted a focus that children had while using technology and difficulty engaging with children when they were using technology. Several theories were raised which all in part explain the findings of this analysis. Primarily, the excitement hypothesis best explains how time spent

on electronics and using media may overshadow other, more developmentally advantageous, activities (Gentile, Swing, et al., 2012). Parents detailed how children were focused on technology and it was difficult to divert their attention to other tasks. Parents also expressed their children's desire to continue using screen time, as opposed to seeing others in person or in other interactive activities. The excitement hypothesis explained how due to the increase in technology and screen time use, other activities, such as playing outdoors, become less interesting in comparison (Gentile, Swing, et al., 2012).

Children's increase in self-regulation difficulties can be explained by the strength model of self-control. Parents reported an increase in irritability and meltdowns over the course of the pandemic, some noting this difficulty when asking children to stop using technology or limiting their engagement. Parents also attributed their child's irritable mood, which was not present prior to the pandemic, to the amount of screen time use they needed to engage in for online school, extracurriculars, and recreation. The strength model of self-control considers self-control as a limited resource capable of depletion upon repetitive exertion (Baumeister et al., 1994). This model would explain why children were having more concerns during the pandemic as the increased time spent on electronics weakened children's ability to exert self-control (Baumeister et al., 2007).

According to the displacement hypothesis, screen time displaces developmentally advantageous activities, that enable children to practice and strengthen self-regulation skills (Gentile, Swing, et al., 2012). Parents noted that screen time had replaced many opportunities for children to practice their social skills, such as on playgrounds and within schools. Some parents communicated that they considered this as a possible explanation for their difficulties regulating their emotions since their children were not able to participate in play-based learning through

remote schooling or outdoor play. In addition, several parents discussed using technology as a babysitter, displacing time that would have been spent with parents and teachers during school and leisure hours. In line with this hypothesis, many opportunities to enhance their emotion regulation and be exposed to good models of self-regulation were replaced with technology use.

Technoference, when digital and or mobile devices interrupt personal interactions or time with another individual, was a common theme among parent-child interactions (McDaniel & Coyne, 2016). Technology was a barrier to parent-child interactions whether it was being used for working from home or as an outlet for parents during the pandemic. In line with this theory, these interactions diminished the frequency of activities and active engagements between parents and children that are important in child development. Many participants noted how their own technology use, especially when in front of their children, resulted in children criticizing parents for their technology use, irritability, and meltdowns.

The descriptions of technology-related dysregulation in young children reflected various components in theories of children's technology use. These findings contribute to the existing literature on technology use and child behaviours as it exemplifies how all these theories can be integrated to best explain the behavioural reactions exhibited by children while engaging in high levels of screen time use. These theories help contextualize the findings of the current study and aid in understanding how child self-regulation is being impacted because of the increased dependence on technology in the wake of the pandemic.

Parenting Stress and Its Impact on Children

In detailing the stress they experienced within their roles as parents, several themes emerged in participants' parenting behaviours and the ways their stress impacted children. The three subthemes included using technology as a parenting tool, engaging in reactive parenting,

and trying to implement rules for technology. Past research has suggested that like the present study, parents may be using technology to occupy and babysit their children to relieve their own anxieties (Chen et al., 2020). To further understand quantitative findings, this study provides context as to why parents decide to use technology in this way, understanding how parental stress and lack of support and resources bring parents to use technology as a distractor.

Parents also highlighted using technology to access parenting information, specifically regarding typical development and resources for the behavioural difficulties their children were exhibiting. Using technology as a tool to gain information and reassurance about children's physical and mental health has been exhibited by parents before the pandemic (Kubb & Foran, 2020), though this was complicated as there is currently a lack of information regarding typical development in the context of the COVID-19 pandemic. Online platforms such as Zoom and Facebook were also common ways parents used technology to reduce their parenting stress and gain information about pandemic parenting practices from parents who understood their experiences. Research during COVID-19 has found reaching out to family and friends on online platforms is a common source of support for parents and families (Gadermann et al., 2021), but the use of large groups and reaching out to parents in similar situations has not been highlighted at this time.

The parenting stress that emerged during COVID-19 for participants has been suggested to impact parenting behaviours and result in more reactive parenting in past research. For example, isolation and lack of support experienced by parents during the pandemic, have been suggested to result in more reactive parenting in past research (Guajardo et al., 2009; Zampini et al., 2022). To wit, COVID-19 research has found that parents with fewer supports, more hours of

isolation, and higher demands of online schooling experienced engaged in more reactive parenting practices (e.g., Vargas Rubilar et al., 2022).

The current study also highlighted the impacts of implementing rules for both parent and child technology use. Parents described how in considering the impacts of their own technology use and their child's technology use, they tried to reduce the amount of time they spent on devices. This included more consciously observing their own and their child's behavioural reactions to using technology and implementing warnings to help children transition between engaging in screen time and other tasks. COVID-19 research has shown that parents enacting rules about screen time aided in reducing the amount of technology use young children engaged in and reduced the average hours of screen time use (Ozturk Eyimaya & Yalcin Irmak, 2021). Limiting technology use and implementing behavioural steps has been suggested as a recommendation for parents during the pandemic (e.g., Chen et al., 2020) which would afford more time for face-to-face parent-child interactions (Canadian Paediatric Society, 2017).

Implications of Findings

The results provide unique insight into the parenting stress, technology use, and child behaviours that are being experienced by young families in Ontario during the COVID-19 pandemic. As a representative sample was recruited, participants were of varying ages, ethnicities, and regional locations. In addition, participants communicated a range of different opinions about COVID-19 and restrictions, technology use, and pandemic parenting practices throughout their interviews. This presents as a strength, gaining insight into the experiences of families in Ontario during the COVID-19 pandemic from a breadth of perspectives.

Specifically, the difficulties ensuring that their children were appropriately engaged in online education and the impacts of online education on these young children and their parents

provide insight for school boards and services to best target and modify educational resources for online education. The unique impacts and obstacles young children and their parents faced (e.g., difficulties attending to information, duration of online school, difficulties with children using online platforms independently) should be considered in developing these platforms and school-based platforms in the event of future restrictions and necessary shifts to online education.

In addition, parents detailed feeling isolated during the pandemic and found services that were previously available (i.e., therapy, in-person support groups, early on and postnatal resources) inaccessible. Going forward, ensuring family and parent resources can more readily adapt to restrictions may reduce the impacts on parenting stress during a subsequent wave or natural disaster and may better support parents during difficult times. As many parents described developmental concerns during the pandemic and the inability to understand typical development in the context of COVID-19, further research on child development during the pandemic should be conducted and disseminated to the public to provide reassurance or information regarding necessary services and resources to families at this time.

This study also provided insight into the impacts of technology use on child behaviour during the COVID-19 pandemic. All families saw an increase in their child's technology use and screen time, many reporting difficulties in their child's self-regulation concerning their technology use. In addition, several parents identified trying to implement technology limits and many still experienced challenges managing their child's reactions and dysregulation. Considering these findings, school boards and services working with young children and their families in Ontario should aim to provide resources and guides to help families understand the impact of screen time and how to successfully implement limits and behavioural steps. For example, the Canadian Paediatric Society (2019) encourages parents to engage in four evidence-

based principles when considering technology use in youth: managing screentime, ensuring screen use is meaningful, acting as a positive model for screen time use, and engaging in balanced and informed monitoring of children's screen time and behaviours. Ensuring that parents can gain access and information about evidenced-based guidance and strategies for technology use in youth may aid in mitigating the challenges experienced by families during and due to the pandemic.

Limitations and Directions for Future Research

The present study had several limitations, and in addition, areas which may be a focus of future research. Although this study aimed to examine the experiences of young families in Ontario during COVID-19, which inherently presents a barrier to generalizability, only parents who identified as female or women participated in this study. The study did have a diverse sample in terms of ethnic background, education, employment, and SES, though recruiting men and fathers may provide more insight into the impacts of parental stress during the pandemic. For example, past studies have identified an increased impact on parental stress and mental health when fathers experience isolation which was predominant during the COVID-19 pandemic. Fathers have also been suggested to experience higher levels of isolation than mothers in pre-pandemic samples (Skreden et al., 2012). In addition, the pandemic is an ongoing and changing experience for families and impacts may be present over time. As COVID-19 policies change and children continue to develop after experiencing this historical event, future research should consider expanding upon this study to examine the evolving and enduring impacts the pandemic present for young families.

Conclusion

This study provides insight into the self-regulation of young children and how technology use and parenting stress have impacted this skill in young children living in Ontario during the COVID-19 pandemic. This research highlighted the specific concerns parents have during the pandemic and the ways their children have been impacted as a result of restrictions and increased technology use. The results of this novel study contribute to the emerging field of COVID-19 research, as well as the field of parenting influences on child behaviour, technology use in parenting strategies, and self-regulation in young children.

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VITA AUCTORIS

NAME:	Rachel Katzman
PLACE OF BIRTH:	Windsor, ON
YEAR OF BIRTH:	1998
EDUCATION:	Vincent Massey High School, Windsor, ON, 2016
	University of Windsor, B.A., Windsor, ON, 2020
	University of Windsor, M.A., Windsor, ON, 2022