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THE IMPACT OF UNEXPECTED CHAOS ON THE DEVELOPMENT OF A CHILD WITH COGNITIVE, SOCIAL, AND EMOTIONAL DELAYS: A CASE STUDY

by

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A thesis submitted in partial; fulfillment of the requirements for the Honors in the Major
Program in Early Childhood Education and Development
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and in The Burnett Honors College
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ABSTRACT

The purpose of this thesis is to examine the impact of environmental, educational, and household chaos on the development of an atypically developing child. The study evaluates the contribution and change of parental stress during the COVID-19 pandemic and school closures. Following Case Study methodology, this is an in-depth evaluation of one mother and child's experience, including data analysis of the child's social, emotional, and cognitive development before and after chaos. The results of this case study identified the development of a child before and after chaotic events occurred. Parental stress was also identified as a contributing factor in results of this study. The results implicate that school systems are a vital piece to the support, management, and growth of healthy child development in atypical children. Results further suggest that parental stress and chaos play a key role in the healthy social-emotional development of a child. Results suggest that cognitive development benefits from smaller group interactions, rather than large, classroom sized, interactions.

DEDICATION

To my wonderful dad, thank you for supporting me in every positive decision and always

pushing me the extra mile. My heart hurts knowing you will never get to read this, but in every

accomplishment, I still feel your love.

To my incredible mother, thank you for showing me what true perseverance and grace looks like.

Thank you for listening to every teary-eyed phone call and for supporting me every step of the

way. Your love and strength are unmatched.

To every teacher and professor I have had the privilege of learning from, thank you for fostering

a love of learning in my heart, and the hearts of others. You are world changers.

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Introduction

Social and emotional skills are being put to the test as children face a growing number of chaotic experiences. Recent studies have defined chaos as "disorganization and instability" (Berry, Blair, Willoughby, Garrett-Peters, Vernon-Feagans, Mills-Koonce, and The Family Life Project Key Investigators 2016, p.115) that can influence a child's academic (Micalizzi, Brick, Flom, Ganiban, and Saudino, 2019; Garrett-Peters, Mokrova, Carr, and Vernon-Feagans, 2016), social-emotional (Berry et al., 2016) and physical (Coley, Lynch, and Kull, 2015) development. Chaotic households, both lower and middle Socio-Economic Status (SES), have been shown to negatively influence young children's understanding of appropriate interactions, observance of rules, self-regulation, and attention, all of which are important for school readiness and later academic success (Garrett-Peters, et al, 2016). While the study of the influence of household chaos, specifically as it is related to SES, has been a primary focus of early childhood research (Berry et al., 2016; Micalizzi, et al, 2019; Garrett-Peters et al, 2016; Coley et al, 2015), several studies have also examined the role of chaos in educational contexts, such as noise level (Linting, Groeneveld, Vermeer, and Ijzendoorn, 2013), home-based and child-center based care (Groeneveld, Vermeer, Ijzendoorn, and Linting, 2010), school-based task orientation (Vitiello & Williford, 2020), and preschool quality (Schmitt, Pratt, Korucu, Napoli, and Schmerold, 2018). In March 2020, the majority of children were introduced to a new global chaotic experience, COVID-19, increasing children's exposure to and experience with household chaos. Over the span of a few weeks, young children who rely on schools to support their emotional, social, and

cognitive learning were sent home. "Household chaos in kindergarten has been linked with lower child IQ and worse conduct problems" (Berry et al., 2016, p.116), which poses a threat to the academic achievement of children due to the lack of social and emotional development provided by classrooms. Young children who were already in academic jeopardy due to developmental delays, such as speech or learning delays, or behavioral challenges, such as ADHD or hypotonia, may have their needs not met. "Parents' abilities to accurately read, interpret, and respond to their child's needs" (Berry et al., 2016, p.116), or provide developmentally appropriate support are not sufficient. During the 2020 pandemic, schools have added to the household chaos. Reports suggest that unstable internet access, lack of technology as well as no face-to-face contact and parental pressure to keep students engaged and constantly learning, have rendered schools and schooling an unstable or chaotic influence on young children and their families' lives (Miller, 2020; Donner & Purtill, 2020). However, no studies have examined what happens to children with developmental delays and their families that experience household chaos while adding the unclear and unsupported demands of academic and social-emotional content normally addressed by schools.

The purpose of this case study is to open a discussion on the possible implications of COVID-19 and other traumatic events on young children with developmental challenges who are experiencing instability in their normal life. This research will help pinpoint the effects of chaos and the implications for necessary intervention in one household. It will also identify the challenges sudden chaos presents parents and the level of stress parents experience without

necessary available resources. Using a Case Study methodology (Stake, 2005; Merriam, 1998), survey, interview, and observational data will be gathered and analyzed in order to examine the effects that chaos has and how to better manage the impacts on one child who already experiences developmental delays, and his mother.

This paper presents a literature review beginning with a definition of chaos and trauma in conjunction with the role each plays in the school setting and family dynamic. Second, chaos is then discussed through the lens of social and emotional development in children. Third, research outlining the impact of chaos on cognitive development is presented. Fourth, the role of chaos in children with developmental delays is discussed. Fifth, the impact of chaos on parental stress is examined. In the second part of the paper, a proposal of research methods, specifically case study methodology will be presented as well as an overview of a single family (mother-child) that will be studied through a series of parent questionnaires and interviews and surveys measuring the child's social, emotional, and cognitive development prior to and after the chaos. This data will then be applied to what is already known and discussed, providing possible implications for the future of chaos, development, and parental stress. Finally, the paper will present the outcomes and implications of the potential case study in order to understand the impact that chaos has on the development of children who are already experiencing developmental delays.

Review of the Literature

Research suggests that there is a negative effect on the development of children with social, emotional, and cognitive delays due to trauma and/or chaotic experiences. An underlying tenet of a productive and supportive learning environment is consistent and reliable rules and expectations (Schmitt et al., 2018). In order for children to learn, they must trust the teachers and the environment will do them no harm. The chaos offers a disruption to the necessary functioning of the child's "normal" life in which routines and school interventions are used to support the student with developmental delays. Following is a review of empirical research that measures and describes the effects of chaos and trauma on children with developmental delays, prior to the COVID-19 pandemic. In order to understand the impact trauma and chaos have on the development of children, chaos must first be defined. More specifically, each must be defined and understood within the context of childhood and children in vital developmental ages, specifically between ages 3 to 8, and in the household and educational setting. Then the adverse effects of chaos on the social-emotional development and academic success of children with disabilities can be discussed.

What is Chaos?

Chaos, in this study, is defined as "disorganization and instability" (Berry et al., 2016, p.115) that can influence a child's academic (Micalizzi et al., 2019; Garrett-Peters et al., 2016), social-emotional (Berry et al., 2016) and physical (Coley et al., 2015) development. In order to

get a clearer idea of the chaos the mother-child family may have experienced; we will draw upon Bronfenbrenner's bioecological theory. The Bioecological theory divides a child's environment into related systems, presenting the idea that "the interrelations among these nested environments allow for examination of how patterns of interactions within these systems influence each other and affect individuals' developmental outcomes (Bronfenbrenner, 1977, 1979)," with the systems being the microsystem or "the immediate environment in which the child lives," the mesosystem, or the relationship between different microsystems, the exosystem which has an "indirect effect on an individual's developmental outcome and is the setting in which the individual does not actively participate", and the macrosystem which "involves the society, and includes cultural values and describes the economic conditions under which families live" (Ashiabi and O'Neal, 2015, p.2). The bioecological theory suggests that chaos and its negative effects not only come from the household setting, but that any of the systems (or system interrelations) that a child interacts with and may introduce "environmental stressors, such as poverty and chaos, [that] can be particularly harmful to children's early and later academic achievement," particularly during critical early childhood years (Garret-Peters, 2016, p. 17). Each of these systems affects children providing the idea that chaos is not limited to the household. In this study particularly, it is necessary to consider the overall impact of multiple sources of chaos including the environmental chaos of the pandemic affecting the child's exosystem, the chaos in school due to the pandemic, and the way that both of these (environmental and school) affect already existent household chaos or add further instability.

Short-term chaos may not have as many negative implications on the development of children as long-term chaos. Long-term chaos means that children retain higher levels of cortisol over a longer period of time, affecting the child's overall well-being. Higher levels of cortisol have been linked to lower cognition (Groeneveld et al., 2010). Long-term chaos can also lead to extended use of coping mechanisms that may not be beneficial to the child. Short-term chaos, while still negatively impacting children, does not always produce the same results due to the resiliency of children.

Environmental Chaos

Environmental chaos is a microsystem that is heavily influenced by the macrosystem, in this case the economic conditions and material resources, of a child including community disarray, which "has also been associated with less advanced behavioral and cognitive skills among young children in studies using a variety of maternal, observational, and census measures of neighborhood disorder (Caughy & O'Campo, 2006; Farver, Natera, & Frosch, 1999; Jackson, 2003; Kohen, Leventhal, Dahinten, & McIntosh, 2008; Supplee et al., 2007; Vaden-Kiernan et al., 2010)" (Coley et al., 2015, p. 95).

The two "different domains of environmental chaos, including environmental disorder (a lack of safety and supportiveness in the physical and built environments surrounding children) and environmental instability (a lack of consistency and stability in primary caregivers and contexts)" both of which "negatively affect children's healthy development" (Coley et al., 2015, p. 95). The adverse effects of this chaos in young children has "the capacity to disrupt the processes involved in young children's stress reactivity, neural circuitry, physiological

regulation, as well as metabolic, cardiovascular, and immunological systems, in turn impacting short and long-term health and development (Blair, 2002; Blair et al., 2011; Meaney, 2010; Shonkoff & Garner, 2012)" (Coley et al., 2015, p. 95). Environmental chaos is multifaceted, including household and school chaos, as well as caregiver instability.

Household Chaos

As a part of the child's microsystem, the household setting is a vital part of the immediate development of children. However, for children in chaotic households, this development has been shown to be negatively impacted.

"Chaotic households are characterized by crowded noisy homes filled with distractions, limited structure and routines, and frequent changes in family structure and residential move, all of which can undermine young children's developing regulatory and preacademic skills and ability to focus on school-related activities (e.g., completing homework) (Evans & Wachs, 2010; Li-Grining, 2007; Vernon-Feagans, Willoughby, Garrett-Peters, & The FamilyLife Project Key Investigators, 2016)."(Garrett-Peters, 2016, p. 16).

For example, in a non-chaotic household, a bedtime routine might consistently include bath time, brushing the child's teeth, reading a book with mom or dad, and falling asleep. However, in a chaotic household, a bedtime routine would lack consistency and not be considered a *routine* at all. It may include a child going to sleep without eating, at a different time each night, with no story being read to them. A child with an inconsistent sleep schedule may then be unable to focus on the mentioned school-related activities.

Berry et al. (2016) reviewed household chaos and development in children in order to see if childcare, or school, played a role in offsetting negative results due to said chaos. "Structure and stability" played a key role in offsetting the negative disparities between children experiencing disorganization (chaos) in the household, and children who experienced stability and structure (Berry et al., 2016). It is important to note that in Berry et al. (2016), the majority of the children in chaotic homes were in lower socioeconomic brackets. Lower and middle SES can adversely affect children, putting the children "at risk for deleterious life outcomes, in part because of the related challenges this creates for the formation of healthy relationships and social skills (Sheridan et al., 2019, p.303), and making them "more than twice as likely to be at high risk for developmental delays as their peers living at more than twice the poverty line" (Sheridan et al., 2019, p. 304).

However, children in low to middle SES are not the only ones who can or will experience household chaos. It is "shown to occur more frequently in low SES homes" but "household chaos is also present in higher SES homes (Vernon-Feagans et al., 2016)" (Micalizzi et al., 2019, p. 332-333). In some cases, household chaos "has been shown to impact cognitive functioning and other developmentally significant outcomes independently of SES (Hart et al., 2007)," showing that chaos impacts children beyond socioeconomic status, especially in cases of worldwide chaos, or school chaos that affects all children (Micalizzi, et al, 2019, p. 332-333).

The relationship of the home and school environment, or mesosystem (Bronfenbrenner, 1994), can act as a mediator for the adverse implications of chaos, both of which have a significant impact on the development of young children. "Parental engagement in the context of

the mesosystem has been found to be motivated primarily by features of the social context, especially parents' interpersonal relationships with children and early childhood educator" (Sheridan et al., 2019, p. 304), in which the positive parent-child, parent-teacher, and home-school relationships act as a bridge between chaos and the development and academic success of children. However, chaos is "multipronged and cross-contextual," possibly occurring in both home and school simultaneously, as seen during the COVID-19 pandemic.

The pandemic, COVID-19, has contributed to and created household and school-based chaos. For families who have not experienced chaos, the closure of schools removed vital consistency and interrupted normal routines, vital to healthy social and emotional development (Coley et al., 2015). For families already experiencing distress, COVID-19 presented more layers of chaos. This may include the shifting of parental roles as parents lost jobs, the managing of childcare which may have become limited or unavailable, a lack of resources that are typically provided by the educational environment that are no longer available, lack of access to the equipment needed for online learning, and a multitude of other unknown changes (Miller, 2020).

Chaos in Educational Settings

Educational chaos became world-wide after the appearance of the COVID-19 pandemic. Normal educational practices and learning were changed along with the social-emotional learning children receive from interacting with peers in the classroom and from teachers who are trained to teach these skills (Donner & Purtill, 2020). Both schools, and full-time childcare alike, are a vital aspect of the interworking of a child's development, especially when children are faced with chaotic, unstructured, or unstable situations (Berry et al., 2016). However, chaos in educational environments has also been shown to negatively influence children's academic and

social-emotional development (Schmitt, 2018; Vitiello & Williford, 2020; Linting et al, 2013; Groeneveld et al, 2010).

School-based chaos has been shown to produce negative physical reactions, specifically a spike in stress hormones negatively impact a child's physical well-being (Groeneveld et al., 2010). Groeneveld et al. (2010) discovered that the quality of childcare resulted in changes in cortisol levels in young children. Spikes in cortisol levels in childcare were linked to large group sizes, large age differences, and large numbers of adults in the setting. High cortisol levels have been linked to lower immune responses and lower cognitive functioning.

When schools function as a continuous and unchanging environment, they create "continuity and consistent experiences across home and preschool settings that enable healthy development for young children via ECE use of relationship-building and joint (parent–ECE) problem-solving strategies" (Sheridan et al., 2019, p. 314). Consistency in the educational setting not only involves routine classroom procedures, but it also encompasses school expectations, calendars, and home-school support. However, schools cannot act as the buffer for the adverse effects of chaos when it is one of the contributing sources of it.

School readiness and Chaos

Household and School-based chaos pose many threats to a child's preparedness for school. School readiness, or the successful transition of a child into school, includes the academic and social-emotional skills before school entrance. Academic skills include literacy skills such as phonological awareness and social-emotional skills such as self-regulation,

belonging, and attachment (Blimes, 2012). Overall academic success has been linked to school

readiness. Dickinson and Porche (2011) found a direct correlation to the school readiness of

four-year-olds and their academic achievement and school success in fourth grade. The home

literacy environment had an indirect effect, through vocabulary skills, on the readiness of

children, in turn affecting the vocabulary and literacy skills of the children in fourth grade

(Dickinson & Porche, 2011).

Chaos is linked to psychological distress, or emotions that impact functioning, and

housing instability, or frequent movement, difficulty paying rent, or living in overcrowded

conditions, creating school readiness disparities at children 5 years, with the expectation of the

instability to have a lasting impact on the children (Ziol-Guest and McKenna, 2014). *School*

readiness and the parent and school's availability to support the learning of the child, acts as a

mesosystem, in which chaos can interrupt normal functioning. Especially during "early

childhood years [that] may be a critical period during which environmental stressors, such as

poverty and chaos, can be particularly harmful to children's early and later academic

achievement. (Future of Children, 2005; Laird, Cataldi, Ramani, & Chapman, 2008)" (Garret-

Peters, 2016, p. 17). School chaos and readiness may be amplified in children who already lack

normal social, emotional, and cognitive skills.

Young Children's Development and Chaos

The construct of social and emotional development masses a large amount of studies

seeking what skills are necessary for proper development and how these skills can be changed,

upset, or modified by interactions, environments, and disabilities. The history of child

development research indicates that children are dynamic and their interrelationships

(Bronfenbrenner, 1994) affect developmental processes. Lev Vygotsky's Sociocultural Theory

suggests that children learn through hands-on experiences and interactions with others. These

social influences are how children learn to interact with others and develop a larger scope of

understanding (Vygotsky, 1978). Jean Piaget proposed the idea that children think and develop

differently than adults. He introduced a four-step sequence in which children develop

intellectually, including thought processes and mental states (Piaget, 1936). Piaget's theory

contributes to Developmentally Appropriate Practice with the idea that children develop vital

knowledge through "spontaneous oral language, tools and materials for creative expression and

investigation" (Gestwicki, 2007, p. 41). The atypical development of children is accounted for in

these theories, of which development can be deeply affected as a direct result of chaotic events

occurring to young children. As the Sociocultural Theory remarks, children learn from

experiences, so, what happens when these experiences are negative, unpredictable, and unstable?

What changes inside atypical development when the environment and relationships the child has

is anything but "normal"?

Social-emotional Development and Chaos

The social-emotional success of children becomes at risk for abnormal development

when exposed to chaotic environments. Garrett-Peters et al. (2016) found that early childhood

household disorganization but not instability was linked to student disengagement in third grade

(Garrett-Peters et al., 2016, p. 16). This study also found the results of household disorganization

to be multipronged and cross- contextual between home and school when understanding the

disengagement among children. The negative implications of disorganization were found to be

mediated by child self-regulatory skills and positive parenting (Garret-Peters et al., 2016). Even

though the adverse implications could be changed by self-regulation and positive parenting,

many children lack the emotional capacity to have natural self-regulatory skills and/or the

caregivers to provide ample opportunity to practice these skills in a positive manner.

Chaos in the home or school environments deeply affects the social-emotional

development for children with special needs. When a child is removed from school, the child is

being removed from the necessary social setting to continue to build the vital self-regulatory

skills to combat the adverse effects of disorganization in the household. For example, Flouri,

Midouhas, Charman, & Sarmadi (2015) found that children who were in low socioeconomic

brackets (a sign of household chaos) who also have Autism Spectrum Disorder and Attention

Deficit Hyperactive Disorder were found to have "elevated emotional problems" when compared

to students in a non-poor household. Poverty may exacerbate emotional problems because

children in lower SES brackets may lack the available resources, parental time, educational time,

and social support that act as a buffer for children in higher SES (Flouri, Midouhas, Charman, &

Sarmadi, 2015). This study solidifies the idea that there are adverse effects of instability on

development, especially in young children who are already developing differently than their

peers.

Cognitive Development and Chaos

Chaos has been linked to an increase in developmental cognitive challenges. Household chaos and "lack of organization and presence of ambient noise [which] have been linked with aggressive behaviors, attention problems (Martin, Razza, & Brooks-Gunn, 2012) and inhibited language development (Martin et al., 2012; Vernon-Feagans et al., 2012) among young children as well as heightened psychological distress in youth (Evans et al., 2005)." (Coley et al., 2015, p. 94-96). Martin et al. (2012) suggested that children who are exposed to continuous noise experience lower reading and auditory skills. Vernon-Feagans et al. (2012) suggested that chaotic households created lower literacy skills in children, beyond environmental factors of low SES and other demographic variables. Evans et al. (2005) suggested that the lack of structure and routine in a chaotic environment can lead to lower cognitive skills.

Cognition refers to the way children develop knowledge and problem-solving skills in order to understand the world around them. Shahaeian, Razmjoee, Wang, Elliot, and Hughes (2017) examined children with relational aggression and the effects it had on their social and cognitive skills. Children were tested on relational aggression (harm caused by damaging one's social status) and language skills. The children who were in low socioeconomic households tend to show lower relational aggression and lower literacy skills. While children in these brackets show higher emotional skills, they were found to have lower social and cognitive abilities due to the lower literacy skills caused by environmental home factors (Shahaeian, Razmjoee, Wang, Elliot, and Hughes, 2017).

Special Needs and Chaos

Narrowing the spectrum further, the impact of chaos on children who already have developmental delays returns much less research in comparison to the research done on chaos and typical children. However, the studies that have been conducted produce powerful insight into the adverse effects of chaos on the development of atypical learners.

By examining the home literacy environment of children with disabilities, Justice, Logan, Isitan, and Sackes (2016) found that while there was little to no differences in the teaching practices of families with typical and atypical children, the children with disabilities were less likely to show interest in print. Children with "at risk profiles" and "language impairment" showed higher rates of depressed language, including print knowledge, emergent writing, and phonological awareness (Justice, Logan, Isitan, and Sackes, 2016, p. 132). This study did not identify any household chaos that may be occurring, therefore showing that regardless of chaos the cognitive skills of atypical children require more research in order to understand ways to help these students. There is a need for research to be conducted on the differences between children experiencing chaos who are developing slower and differently than the usual standard.

A major aspect of development among children is the ability to regulate emotions in order to have healthy social and behavioral functioning. In an additional study conducted on children with Autism Spectrum Disorder, researchers investigated the connection between underlying emotional processes with the problems faced by children with ASD. The children were studied on their ability to label, express, and display emotions in a social setting. The study was conducted over two years and found that "emotional dysregulation predicts possible increases in social and behavioral difficulties across time" but stands "largely independent of IQ"

(Berkovits, Eisenhower, and Balcher, 2016). These results suggest that if IQ and cognition are not factors, emotional dysregulation, which can be caused by chaos and other outward factors, may lead to larger social and behavioral issues for children. As discussed previously, emotional regulation can be impacted by instability (Garret-Peters et al., 2016), posing children with developmental delays at a larger risk for social and behavioral difficulties. In conjunction with the Berkovits, Eisenhower, and Balcher (2016) conclusions, a study including emotional regulation of children with Autism and the coregulation of their caregiver found that the parents ability to scaffold and respond sensitively to their child's emotions proved to be important for the child's own ability to self-regulate (Ting and Weiss, 2017). In a chaotic environment, home, or school situations, there may not be the coregulation from parents in order to guide the children in the direction of healthy emotional regulations, impacting social and emotional development as a whole.

Poverty was found to exacerbate emotional problems in children in low and middle socioeconomic brackets (a sign of household chaos) who also have Attention Deficit Hyperactive Disorder when compared to students in a non-poor household. This, in part, is linked to lower and middle SES brackets that may lack the available resources, parental time, educational time, and social support that act as a buffer for children in higher SES (Flouri, Midouhas, Charman, & Sarmadi, 2015).

Trauma and Chaos

Trauma is not the focus of this study but acts as a facilitator for chaos and poses some effect on children who were expelled from school, such as the subject of this study. Children's

interactions with media and stress related to COVID-19 may also present itself as "traumatic" and therefore, trauma should be defined. Trauma, for this study, will follow the definition given by Diamanduros, Tysinger, and Tysinger (2018) in their in depth study on the impact trauma has on children, as being "a child's experiences a direct or perceived threat of harm that renders the child feeling overwhelmed and fearful for their safety and the safety of those around them" (p. 24). Chaos can exist without trauma, but implications for trauma may be found after chaotic experiences.

Trauma experienced by the parent or caregiver, measured by ACEs (adverse childhood experiences), affects parenting practices, in turn impacting the household dynamic. The ACEs are potential traumatic events that occurred between the ages of 0-17, falling under three categories: abuse, neglect, and household dysfunction. The "outcomes associated with trauma, including mental illness, are associated with parenting behaviors, such as insecure parent–child attachment (bond) and decreased maternal sensitivity (responding to a child's signals) (Downey and Coyne 1990; Lovejoy et al. 2000)," all of which may contribute to chaos in the home setting (Lange, Callinan, and Smith, 2018, p. 652). Furthermore, responsive and sensitive parenting, which can be influenced by adversity, is an important role in executive functioning (Zvara, Kiem, Boone, and Anderson, 2019).

Methodology

Using Stake (2008) and Merriam (1998) case study methodology, this study examines the research question: How does unexpected chaos and parental stress impact the development of children with social, emotional, and cognitive delays? With three guiding sub-questions: (1) what is the effect of chaos on the child's emotional development?, (2) what is the effect of chaos on the child's social development?, and (3) what is the effect of chaos on the child's cognitive development?

Research Questions

The goal of this study is to examine what happens to children with developmental delays and their families that experience household chaos while adding the unclear and unsupported demands of academic and social-emotional content normally addressed by schools. This study seeks to answer the following questions:

Research Question: How do unexpected chaos and parental stress impact the development of a child with social, emotional, and cognitive delays?

> **Sub-question 1:** What is the effect on the child's emotional development?

> **Sub-question 2:** What is the effect on the child's social development?

> **Sub-question 3:** What is the effect on the child's cognitive development?

Within this study, there are multiple views or perspectives without a declared "best view." The study contains many questions compiled into 4 main questions that have a list of ways to accumulate data through interviews, observation, and document review (Stake, 2008). Analysis

of the data includes "making sense" of it through consolidating and interpreting the data

(Merriam, 1998), rather than relying on personal impressions (Stake, 2008). Validation of the

data uses Merriam's (1998) idea that data is not fixed, but is multidimensional and continuously

changing, being used to verify the researcher's conclusion.

Research Participants

The researchers will seek a voluntary mother-child unit in which the mother is over 18

years of age and the child has (1) experienced trauma, (2) social, emotional, and cognitive

delays, and (3) is between the ages of 3 to 8. As per the IRB requirements, all the procedures for

data collection and storage will be maintained. All names are pseudonyms.

Data Collection Methods

This study uses a qualitative analysis of data that identifies differences in cognitive,

social, and emotional development of one 5-year-old child before, during, after the occurrence of

chaos. Maternal stress will be measured through a series of questionnaires with accompanying

interviews concerning the mother, child, and household/schooling environment. The mother's

ACE's score will also be accounted for.

Data will be collected through a series of questionnaires, surveys, open-ended interviews,

and observations. Data will include one week between each questionnaire, survey, and interview

with each being less than 30 minutes. The participant will also have checks in order to clarify

information collected from previous interviews to validate the information.

    Parent Focused:

        1. Demographic Information

2. Parenting-style questionnaire (see Appendix B)

   a. A 30 item self-report measurement that will identify the parenting style of the mother (authoritative, authoritarian, or permissive).

3. Parents ACE's score (not specific answers)

   a. A 10-question survey that identifies adverse situations the mother may have experienced in her childhood. The score will be reported without specific answers.

4. Parental stress questionnaire- before chaos (see Appendix C)

   a. 18 count questionnaire in which the mother will report, on a scale 1 (strongly disagree) to 5 (strongly agree), overall feelings towards her child and family before the chaos.

5. Parent stress questionnaire- during chaos (see Appendix C)

   a. 18 count questionnaire in which the mother will report, on a scale 1 (strongly disagree) to 5 (strongly agree), overall feelings towards her child and family during the chaos.

6. Parental stress questionnaire- after chaos (see Appendix C)

   a. 18 count questionnaire in which the mother will report, on a scale 1 (strongly disagree) to 5 (strongly agree), overall feelings towards her child and family after the chaos.

The parental interviews will consist of open-ended questions regarding the previously collected questionnaires (parenting-style, ACEs score, and Parental Stress). Additionally, open-ended

questions will be asked regarding the parent's experience with the child in school and at home.

(See Appendix A for interview protocol)

Child Focused (5-year-old):

1. Social skills survey, pre-chaos (see Appendix D)

    a. A 27- part questionnaire, answered by the mother from a scale of 1 to 3 (1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies, to analyze the child's social skills prior to chaos.

2. Social skills survey, post chaos (see Appendix E)

    a. A 27 part questionnaire, answered by the mother from a scale of 1 to 3 (1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies, to analyze the child's social skills after chaos.

3. Child Emotional skills survey, pre-chaos (see Appendix F)

    a. A 25 part questionnaire, answered by the mother from a scale of 1 to 3 (1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies, to analyze the child's emotional skills prior to chaos.

4. Child Emotional skills survey, post chaos (see Appendix G)

    a. A 25 part questionnaire, answered by the mother from a scale of 1 to 3 (1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies, to analyze the child's emotional skills after chaos.

5. Cognitive measuring, pre chaos (see Appendix H)

a. A 48 part questionnaire, answered by the mother from a scale of 1 to 3 (1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies, to analyze the child's cognition prior to chaos.

6. Cognitive measuring, post chaos (see Appendix I)

   a. A 48 part questionnaire, answered by the mother from a scale of 1 to 3 (1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies, to analyze the child's cognition after chaos.

Findings

When support systems breakdown, parenting a child with special needs during a pandemic is impacted by three main sources of chaos, according to the data: (1) School systems and school chaos, (2) Parental stress and the home learning environment, and (3) the change of social norms and routines.

School systems act as a major part of a young child's life, providing educational support to children with diverse needs, including school funded resources for parents of students with special needs, including ADHD. The parent stated that prior to the pandemic and homeschooling, the school systems and programs that support special needs students helped her navigate the child's development and allowed her to better support her child. In an interview on October 29, 2020, the parent stated:

I am upset at the lack of services and COVID has only emphasized it because of the isolation and understanding that parents have to deal with so much more because school really is a huge part of dealing with a kid with ADHD or cognitive issues and transitions.

If they aren't able to have that outlet, that recess, that capability to learn separate of the

home environment, the behaviors become worse and the parents are dealing with more

and it is not fair that we don't get service because it is 'only ADHD.'

For this mother, the school system provided major resources such as speech therapy and developmental support. These supports were directly impacted by the closure of schools, completely removing all special education and regular education supports. The school systems acted as a successful way for the parent to assist her child, but when the school systems broke down, so did the support the parent and child received. The parent stated in an interview on October 15, 2020:

With VPK, there was no program…we would call the teachers sometimes…but they

didn't have a program. They tried, but every time they would have something, [his

sister's] school was doing something at the exact same time. I didn't have two computers

and my husband's computer broke and we couldn't get another computer because we

couldn't go to BestBuy… I didn't feel very supported. I loved this school, don't get me

wrong but it was very difficult for everybody at that time…I am not a teacher and I didn't

know what resources were out there.

The shift from a daily routine and school schedule into a home environment with little support from the school and government proved to be a challenge for the mother. The mother, who has a Master's Degree, did not feel that she was prepared to teach content to her child, of which she shared in an interview on October 15, 2020

He didn't associate home as being a school environment so therefore, he wasn't going to

do school at home. So, the perception of the space was a big problem and I tried to make

a school space and [he] kinda looked at me like 'I'm not falling for that.'

The inability to view the home environment as a "school" setting may be attributed to the home

environment previously being a place in which the child was able to play games and read books

of his choosing, removing the traditional learning that school provided. The mother was given

the task of being a teacher to her children while also experiencing and helping her children

through environmental, school, and household chaos all at once, along with a multitude of

personal health issues, proving to heighten her parental stress.

The Parental Stress survey, taken on October 5th, 2020, found that prior to COVID-19

and the removal of school, "Caring for children takes more time and energy than [she] had to

give" and "Having children leaves little time and flexibility in [her] life" were both statements

the mother marked as a "disagree (2)." However, after COVID-19 and homeschooling, in a

survey taken on October 15th, 2020, she marked these an "agree (4)." Furthermore, when

answering "It is difficult to balance different responsibilities because of my children," prior to

the chaos, the mother answered "disagree (2)," during chaos she answered "strongly agree (5),"

and after the chaos, upon the return of school, she answered, "strongly disagree (1)." The mother

also answered, "I feel overwhelmed by the responsibility of being a parent" with a "strongly

disagree (1)" prior to and after the introduction of chaos, and an "agree (4)" during the chaos.

The chaotic environment perpetuated the mother's perception of being overwhelmed.

Parental stress is known to be a factor when examining children's development. The

parental stress when coupled with the extreme chaos provided adverse effects on the child's

development that cannot be overlooked. Comparing the pre- and post- chaos surveys for emotional development suggests that the child's development was negatively impacted in a variety of ways.

The emotional impact is evident through in the "Pre-Chaos Emotional Skills survey" taken on October 22nd, 2020 and the "Post Chaos Emotional Skills Survey" completed on November 11th, 2020. The child moved from an "applies sometimes (2)" to an "applies (3)" in several scenarios including stealing items from home, recurrent periods of irritability, seemingly unhappy and/or depressed, and expressing feelings of being worthless and/or inferior to other children. He moved from a "does not apply (1)" to an "applies (3)" in two areas, including recurrent episodes of a few days with high activity levels and often blaming others for his own mistakes or bad actions. The mother made note that the child now says "you're making me crazy in my head" when blaming others. However, the child's cognitive development remained the same or progressed in all areas.

The shift in the understanding of social situations due to the interruption in normal routines was a large factor in the development of the child's social skills and understanding of normal boundaries. According to the mother in an interview on October 29th, 2020:

> They don't understand what their boundaries are anymore. There was one set of boundaries that were normal… now there's different, significantly different, set of boundaries. Teaching them that shift in boundaries at such a young age has been very tricky. It's much harder for [him}… [he] licks the mask and rips it off his face and then walks up to somebody and he has gotten into this weird spitting thing which is awkward.

The change in the child's social behavior is proved through the analysis of the "Social Skills Survey," which measures a child's social development from a 1 to a 3, from prior to and after the removal of school and the introduction of chaos. The data shows that after experiencing the chaos, the child is less likely to understand social cues, moving from an "applies sometimes (2)" to an "applies (3)." The way the child is perceived by peers as odd moved from an "applies sometimes (2)" to an "applies (3)." The mother's perception of how he interacted with peers was based on peer interactions during soccer, which started at the beginning of the school year. He also began to blurt out more socially inappropriate comments, such as "this house has COVID." The mother also noted that while he has never responded well to minor changes in daily routines, it has become a larger issue after the chaos. It is important to note that on the comments section of the "Social Skills Survey," the child began to readily rely on technology rather than verbally expressing his emotions when bored and/or lonely, rather than attempting to express his emotions.

The mother also expressed concerns that the child's social skills are declining due to the isolation of close friends due to COVID and the elimination of interactions among peers his age stated in an interview on October 29, 2020:

> You need to have them [children with ADHD] participate in activities or else it is to your detriment mentally, physically, and emotionally. So, they need to be a part of life and if they are not a part of life, they take it out on you as the parent.

This statement reiterates the above data that parental stress, chaos, and the child's development are consequential.

Discussion

Recent events have introduced chaotic experiences into the lives of young children on a global scale, caused by the COVID-19 pandemic that led to school closure, homeschooling, and heightened parental stress. Research suggests that during "early childhood years [that] may be a critical period during which environmental stressors, such as poverty and chaos, can be particularly harmful to children's early and later academic achievement. (Future of Children, 2005; Laird, Cataldi, Ramani, & Chapman, 2008)" (Garret-Peters, 2016, p. 17). These early developmental years are crucial to the overall well-being of a child, influenced by the surrounding factors. Upon studying the implications of said chaos on a young boy with atypical social, emotional, and cognitive development, we must identify the areas in which the chaos had the greatest influence.

The Breaking Down of School Systems and Parental Support

Following the case study method set forward by Merriam (1998) and Stake (2008), we conducted an in-depth look at one specific mother and child's experiences. When school systems broke down, so did the support the parent received. As we know, the exosystem, which has an "indirect effect on an individual's developmental outcome and is the setting in which the individual does not actively participate", Ashiabi and O'Neal, 2015, p.2), was completely altered, inserting the mother and child into an isolated home living situation with little to no support from the school or government agencies. The lack of consistency and complete removal across home and school environment interrupted the structure, stability, and routine (Ashiabi and O'Neal, 2015, p.2) necessary for the healthy development of a child (Sheridan et al., 2019, p. 314), reflected in the regression the child made in his emotional development.

During this time, parental support from school and educators was at an all-time low, explaining the exhibition of higher levels of parental stress. Support systems that are received by the parent and student for free were extracted, leaving the parent with little support, large amounts of stress, and the expectation to be a teacher, therapists, and speech pathologists with no training in these fields. Coupled with *household disorganization,* which is "multipronged and cross- contextual between home and school due to environmental chaos (Garret-Peters et al., 2016), it is understood why the child's social and emotional development digressed in several areas.

Parental Stress

In response to the breaking down of normal systems, the mother's parental stress rate reached higher than they were previously, with a multitude of factors contributing to this rise. When we look at other research, it is understood that the coregulation of caregivers and the parent's ability to scaffold and respond to their child's emotions is necessary for the child's willingness and ability to self-regulate (Ting and Weiss, 2017). Considering the growth in parental stress during the time of chaos, it is understood that the child's emotional development would fall, especially when considering the child's ability to express his irritability and feelings of sadness through words. In reviewing our study in connection with Berkovits, Eisenhower, and Balcher (2016), choosing not to consider cognition, emotional dysregulation is seemingly caused by outward factors, such as parental stress and chaos, which leads to larger social and behavioral issues for the child.

These results suggest that parental support from the school system is essential to diluting, and even eliminating, the adverse effects of all types of chaos. When viewing the mass scale at

which school structure broke down, it is clear that it is necessary to have an inclusive system

prepared for all students in preparation for a myriad of large scale, chaotic events. This research

suggests that household chaos is not the only contributing factor in a child's irregular

development but that environmental and school chaos are large scale contributors to the overall

wellbeing of a child. Without the procedures set in place for chaos that are inclusive to all

children, regardless of socio-economic status or speical needs, the school system is failing the

very children it claims to support.

Implications of Chaos on the Social-Emotional Development

The greatest change was noted in the child's social and emotional development which is

expected when reviewing recent studies that found "structure and stability" to be leading

components of healthy development (Sheridan et al., 2019, p. 314). Taking away that structure

and stability, while adding in new social norms with already misunderstood social cues, the child

is struggling to socially interact and emotionally regulate.

A note on the Cognitive Development

When considering the development of a child, it is important to consider the role of

cognitive development. Previous research states that "environmental stressors, such as poverty

and chaos, [that] can be particularly harmful to children's early and later academic

achievement," particularly during critical early childhood years (Garret-Peters, 2016, p. 17). In

contrast, results from our research did not find this to be true. The child's cognitive development

improved in all areas surveyed. This discovery suggests that the one-on-one interactions the child

was receiving from his mother, rather than whole group instruction, was more beneficial to his

cognition. This research does not account for any testing or grade-level standards that may need

to be met but is a general look at the benefits of direct instruction of cognitive skills in the absence of typical schooling.

Family Demographic Implications

When reviewing other studies that focus on the atypical development of children, it was generally found to be larger in children from lower socioeconomic backgrounds than higher socioeconomic backgrounds. It is also suggested that the higher the ACE's score of a mother, the higher the parental stress which can lead to harsher parenting, whereas warm parenting is connected to higher functioning skills in children (Zvara, Kiem, Boone, and Anderson, 2019). The participants of this study are from a high to middle-income bracket, in which the mother has an ACE's score of 0. This information suggests that this level of chaos was more catastrophic for families in low socioeconomic brackets with mothers who have higher ACE's scores. In response to this, more research will need to be done on the impact of mass chaos on children from low SES and higher stress environments.

Limitations

This study has potential limitations. First, this research is a case study, limited to one mother-child family and their personal, subjective experiences. Many of these experiences are not specific to this family but are only reviewed through the lens and understanding of the individuals. These experiences are viewed through the lens of a middle-age, upper middle class, Caucasian, authoritative style parenting mother and her son. Second, this study is limited to identifying the short-term effects of unexpected chaos, rather than studying the long-term impact of chaotic experiences on the child's overall wellbeing. Future research may benefit from studying multiple families and comparing quantitative and qualitative data of the social,

emotional, and cognitive wellbeing of children before, during, and after chaotic experiences, over a longer period of time. This data is not generalizable but when placed with other research and data, it offers insight into the impact of chaos on children with special needs.

Conclusion

The results of this case study identified the development of a child before and after chaotic events occurred. Parental stress was also identified as a contributing factor in the results of this study. Results implicate that school systems are a vital piece to the support, management, and growth of healthy child development in atypical children and play a necessary buffer in offsetting the negative impact of chaos. Results further suggest that parental stress and chaos play a key role in the healthy social-emotional development of a child. Results suggest that cognitive development benefits from smaller group interactions, rather than large, classroom sized, interactions.

Appendix A

Interview Protocol

Participants will be interviewed 3 times. The interviews will be conducted by phone, on zoom, or in person depending on the participants comfort and UCF-IRB regulations.

Interviews will be stored on a password protected computer in a password protected file.

Participants will also have "participant checks" in order to clarify information collected from previous interviews to validate the information.

Interview questions will include:

Parent Interview Questions

1. Tell me about your child, share anything you would like me to know.

2. Tell me about his first day of school.

3. Tell me about a time he made you proud.

4. Tell about his removal from school.

5. Share with me what resources were available to you before your child was removed from school and prior to COVID-19.

6. What resources were available to you during this time?

7. What was the biggest struggle for your child after being expelled from school?

8. What was the biggest struggle for you?

9. What was something positive that came from these experiences, if any?

10. Is there anything else you would like to share?

11. When your child had a problem with aggression with peers before Covid, where or who did you reach out to for help

Appendix B

Parenting Style Questionnaire

PARENTING STYLE QUESTIONNAIRE

Please rate how often you engage in the different parenting practices, listed below. Scores range from "Never" to "Always" on a 5-point scale. At the end of each section, add up the scores and divide it by the number of questions in that section. The calculated score is your total score for that category. The highest score indicates your preferred parenting style.

Authoritative Parenting Style

1. I am responsive to my child's feelings and needs:

Never 1   2   3   4   5   6 Always

2. I take my child's wishes into consideration before I ask him/her to do something:

Never 1   2   3   4   5   6 Always

3. I explain to my child how I feel about his/her good/bad behaviour:

Never 1   2   3   4   5   6 Always

4. I encourage my child to talk about his/her feelings and problems:

Never 1   2   3   4   5   6 Always

5. I encourage my child to freely "speak his/her mind", even if he/she disagrees with me:

Never 1   2   3   4   5   6 Always

 6. I explain the reasons behind my expectations:

Never 1   2   3   4   5   6 Always

7. I provide comfort and understanding when my child is upset:

Never 1   2   3   4   5   6 Always

8. I compliment my child:

Never 1   2   3   4   5   6 Always

9. I consider my child's preferences when I make plans for the family (e.g., weekends away and

holidays):

Never 1   2   3   4   5   6 Always

10. I respect my child's opinion and encourage him/her to express them:

Never 1   2   3   4   5   6 Always

11. I treat my child as an equal member of the family:

Never 1   2   3   4   5   6 Always

12. I provide my child reasons for the expectations I have for him/her:

Never 1   2   3   4   5   6 Always

13. I have warm and intimate times together with my child:

Never 1   2   3   4   5   6 Always

Scoring: Total score .... / 13 = ...

Authoritarian Parenting Style

1. When my child asks me why he/she has to do something I tell him/her it is because I said so, I am your parent, or because that is what I want:

Never 1   2   3   4   5   6 Always

2. I punish my child by taking privileges away from him/her (e.g., TV, games, visiting friends):

Never 1   2   3   4   5   6 Always

3. I yell when I disapprove of my child's behaviour:

Never 1   2   3   4   5   6 Always

4. I explode in anger towards my child:

Never 1   2   3   4   5   6 Always

5. I spank my child when I don't like what he/she does or says:

Never 1   2   3   4   5   6 Always

6. I use criticism to make my child improve his/her behaviour:

Never 1   2   3   4   5   6 Always

7. I use threats as a form of punishment with little or no justification:

Never 1   2   3   4   5   6 Always

8. I punish my child by withholding emotional expressions (e.g., kisses and cuddles):

Never 1   2   3   4   5   6 Always

9. I openly criticise my child when his/her behaviour does not meet my expectations:

Never 1   2   3   4   5   6 Always

10. I find myself struggling to try to change how my child thinks or feels about things:

Never 1   2   3   4   5   6 Always

11. I feel the need to point out my child's past behavioural problems to make sure he/she will not

do them again:

Never 1   2   3   4   5   6 Always

12. I remind my child that I am his/her parent:

Never 1   2   3   4   5   6 Always

13. I remind my child of all the things I am doing and I have done for him/her:

Never 1   2   3   4   5   6 Always

Scoring: Total score .... / 13 = ...

Permissive Parenting Style

1. I find it difficult to discipline my child:

Never 1   2   3   4   5   6 Always

2. I give into my child when he/she causes a commotion about something:

Never 1   2   3   4   5   6 Always

3. I spoil my child:

Never 1   2   3   4   5   6 Always

4. I ignore my child's bad behaviour:

Never 1   2   3   4   5   6 Always

Scoring: Total score .... / 4 = ...

Parenting Styles: On the lines below you can record the rank order of your preferred parenting

styles:

1) .... Score:

2) .... Score:

 3) .... Score:

Based on: Robinson, C., Mandleco, B., Olsen, S. F., & Hart, C. H. (1995). Authoritative,

authoritarian, and permissive parenting practices: Development of a new measure. Psychological

Reports, 77, 819-830.

Appendix C

Parental Stress Questionnaire

Parental Stress questionnaire:

Rate these **prior to** your child being removed from Pre-K and the COVID-19 Pandemic

1 = Strongly disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly agree

_____ 1. I am happy in my role as a parent.

_____ 2. There is little or nothing I wouldn't do for my child(ren) if it was necessary.

_____ 3. Caring for my child(ren) sometimes takes more time and energy than I have to give.

_____ 4. I sometimes worry whether I am doing enough for my child(ren).

_____ 5. I feel close to my child(ren).

_____ 6. I enjoy spending time with my child(ren).

_____ 7. My child(ren) is an important source of affection for me.

_____ 8. Having child(ren) gives me a more certain and optimistic view for the future.

_____ 9. The major source of stress in my life is my child(ren).

_____ 10. Having child(ren) leaves little time and flexibility in my life.

_____ 11. Having child(ren) has been a financial burden.

_____ 12. It is difficult to balance different responsibilities because of my child(ren).

_____ 13. The behavior of my child(ren) is often embarrassing or stressful to me.

_____ 14. If I had it to do over again, I might decide not to have child(ren).

_____ 15. I feel overwhelmed by the responsibility of being a parent.

_____ 16. Having child(ren) has meant having too few choices and too little control over my life.

_____ 17. I am satisfied as a parent.

_____ 18. I find my child(ren) enjoyable.

Rate these items **during** your homeschooling and the COVID-19 Pandemic

1 = Strongly disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly agree

_____ 1. I am happy in my role as a parent.

_____ 2. There is little or nothing I wouldn't do for my child(ren) if it was necessary.

_____ 3. Caring for my child(ren) sometimes takes more time and energy than I have to give.

_____ 4. I sometimes worry whether I am doing enough for my child(ren).

_____ 5. I feel close to my child(ren).

_____ 6. I enjoy spending time with my child(ren).

_____ 7. My child(ren) is an important source of affection for me.

_____ 8. Having child(ren) gives me a more certain and optimistic view for the future.

_____ 9. The major source of stress in my life is my child(ren).

_____ 10. Having child(ren) leaves little time and flexibility in my life.

_____ 11. Having child(ren) has been a financial burden.

_____ 12. It is difficult to balance different responsibilities because of my child(ren).

_____ 13. The behavior of my child(ren) is often embarrassing or stressful to me.

_____ 14. If I had it to do over again, I might decide not to have child(ren).

_____ 15. I feel overwhelmed by the responsibility of being a parent.

_____ 16. Having child(ren) has meant having too few choices and too little control over my life.

_____ 17. I am satisfied as a parent.

_____ 18. I find my child(ren) enjoyable.

Rate these items **<u>after</u>** your homeschooling experience and the COVID-19 Pandemic

1 = Strongly disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly agree

____ 1. I am happy in my role as a parent.

____ 2. There is little or nothing I wouldn't do for my child(ren) if it was necessary.

____ 3. Caring for my child(ren) sometimes takes more time and energy than I have to give.

____ 4. I sometimes worry whether I am doing enough for my child(ren).

____ 5. I feel close to my child(ren).

____ 6. I enjoy spending time with my child(ren).

____ 7. My child(ren) is an important source of affection for me.

____ 8. Having child(ren) gives me a more certain and optimistic view for the future.

____ 9. The major source of stress in my life is my child(ren).

____ 10. Having child(ren) leaves little time and flexibility in my life.

____ 11. Having child(ren) has been a financial burden.

____ 12. It is difficult to balance different responsibilities because of my child(ren).

____ 13. The behavior of my child(ren) is often embarrassing or stressful to me.

_____ 14. If I had it to do over again, I might decide not to have child(ren).

_____ 15. I feel overwhelmed by the responsibility of being a parent.

_____ 16. Having child(ren) has meant having too few choices and too little control over my life.

_____ 17. I am satisfied as a parent.

_____ 18. I find my child(ren) enjoyable.

From: Reference: Berry, J. O., & Jones, W. H. (1995). The Parental Stress Scale: Initial

psychometric evidence. Journal of Social and Personal Relationships, 12, 463-472.

Appendix D

Social Skills Survey (Pre-Chaos)

Please answer these questions in terms of your child and his interactions **prior to** school closure and COVID-19.

Answer from a scale of 1 to 3.

 (1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies

Circle Answer.

Social skills; the child's capacity to participate in social settings and interact with others

Prior to the chaos, my child:

1. Does not clearly understand other people's social cues, e.g., facial expressions,gestures, tone of voice, or body language

1   2   3

2. Difficulty understanding the feelings of other people

1   2   3

3. Difficulty responding to the needs of other people

1   2   3

4. Difficulty verbally explaining emotions when feeling lonely, being bored etc

1   2   3

5. Speaks with a monotonous or strange voice

1   2   3

6. Difficulty expressing emotions and reactions with facial gestures or body language

1   2   3

7. Markedly "old fashioned" style?

1   2   3

8. Difficulty behaving as expected by peers

1   2   3

9. Difficulty realising how to behave in different social situations, such as when visiting relatives together with parents, when visiting friends, seeing a doctor, going to the cinema, etc.

1   2   3

10. Is perceived by peers as different, odd, or eccentric peers start laughing

1   2   3

11. Unintentionally makes a fool of himself so that parents feel embarrassed or

1   2   3

12. Often seems to lack common sense

1   2   3

13. Has a weak sense of humour

1   2   3

14. Often blurts out socially inappropriate comments

1   2   3

15. Difficulty comprehending rules or prohibitions

1   2   3

16. Often quarrels with peers

1   2   3

17. Difficulty understanding and respecting other people's rights, for example, that younger children need more help than older ones, and that parents should be left alone when they demand it, etc.

1   2   3

18. Difficulty in group or team activities or games, invents new rules for own benefit

    1   2   3

19. Difficulty making good friends

1   2   3

20. Does not often interact with peers

1   2   3

21. Difficulty to participate in group activities

1   2   3

22. Not accepted by other children to participate in their games

1   2   3

23. Does not care for physical contact such as hugs

1   2   3

24. Has one or a few interests that take up considerable time and that impinge on relations with

family and friends

1   2   3

25. Repeats or gets stuck in seemingly meaningless behaviours or activities

1   2   3

26. Gets very upset by tiny changes in daily routines

1   2   3

27. Eye contact in face to face situations is abnormal or missing

1   2   3

Do problems with social skills interfere with your child's daily functions? Please circle one.

1. Not at all

2. A little

3. Pretty much

4. Very much

Adapted from the 5-15 Questionnaire for Evaluation of Development and Behaviour (Questions 122-148)

Kadesjö, B., Janols. L-O, Korkman, M., Mickelsson, K., Strand, G., Trillingsgaard, A., Lambek, R., Øgrim, G., Bredesen, A. M., & Gillberg, C. (2017). Five-To-Fifteen-Revised (5-15R). Available at www.5-15.org

Appendix E

Social Skills Survey (Post Chaos)

Please answer these questions in terms of your child and his interactions **after** the removal of

school and COVID-19.

Answer from a scale of 1 to 3.

 (1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies

Circle Answer.

Social skills; the child's capacity to participate in social settings and interact with others

After experiencing chaos, my child:

1. Does not clearly understand other people's social cues, e.g., facial expressions,gestures, tone

of voice, or body language

1   2   3

2. Difficulty understanding the feelings of other people

1   2   3

3. Difficulty responding to the needs of other people

1   2   3

4. Difficulty verbally explaining emotions when feeling lonely, being bored etc

1   2   3

5. Speaks with a monotonous or strange voice

1   2   3

6. Difficulty expressing emotions and reactions with facial gestures or body language

1   2   3

7. Markedly "old fashioned" style?

1   2   3

8. Difficulty behaving as expected by peers

1   2   3

9. Difficulty realising how to behave in different social situations, such as when visiting relatives together with parents, when visiting friends, seeing a doctor, going to the cinema, etc.

1   2   3

10. Is perceived by peers as different, odd, or eccentric peers start laughing

1   2   3

11. Unintentionally makes a fool of himself so that parents feel embarrassed or

1   2   3

12. Often seems to lack common sense

1   2   3

13. Has a weak sense of humour

1   2   3

14. Often blurts out socially inappropriate comments

1   2   3

15. Difficulty comprehending rules or prohibitions

1   2   3

16. Often quarrels with peers

1   2   3

17. Difficulty understanding and respecting other people's rights, for example, that younger children need more help than older ones, and that parents should be left alone when they demand it, etc.

1   2   3

18. Difficulty in group or team activities or games, invents new rules for own benefit

    1   2   3

19. Difficulty making good friends

1   2   3

20. Does not often interact with peers

1   2   3

21. Difficulty to participate in group activities

1   2   3

22. Not accepted by other children to participate in their games

1   2   3

23. Does not care for physical contact such as hugs

1   2   3

24. Has one or a few interests that take up considerable time and that impinge on relations with

family and friends

1   2   3

25. Repeats or gets stuck in seemingly meaningless behaviours or activities

1   2   3

26. Gets very upset by tiny changes in daily routines

1   2   3

27. Eye contact in face to face situations is abnormal or missing

1   2   3

Do problems with social skills interfere with your child's daily functions? Please circle one.

1. Not at all

2. A little

3. Pretty much

4. Very much

Emotional Skills Survey (Pre-Chaos)

Please answer these questions in terms of your child and his interactions **prior to** the removal of school and COVID-19.

Answer from a scale of 1 to 3.

(1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies

Circle Answer.

1. Poor self-confidence

      1   2   3

2. Seems to be unhappy, sad, depressed

      1   2   3

3. Often complains about feelings of loneliness

      1   2   3

4. Has tried to inflict bodily damage to him-/herself or talks about that

      1   2   3

5. Has a poor appetite

      1   2   3

6. Often expresses a feeling of being worthless or inferior to other children

      1   2   3

7. Often complains about bellyaches, headaches, breathing difficulties or other bodily symptoms

      1   2   3

8. Appears tense and anxious or complains about being nervous school

1   2   3

9. Becomes very anxious or unhappy when leaving home e.g., when setting to

      1   2   3

10. Often has sleeping problems

      1   2   3

11. Often has nightmares

     1   2   3

12. Walks in sleep or has nocturnal attacks when he/she cannot be "reached" or comforted

1   2   3

13. Often loses temper

     1   2   3

14. Often argues with adults

     1   2   3

15. Often refuses to follow the instructions of adults

     1   2   3

16. Often teases others by deliberately doing things that are perceived as provocative

     1   2   3

17. Often blames others for own mistakes or bad actions

     1   2   3

18. Is easily offended, or disturbed by others

     1   2   3

19. Often gets into fights

     1   2   3

20. Is cruel to animals

     1   2   3

21. Lies and cheats

     1   2   3

22. Steals things at home

     1   2   3

23. Often destroys the belongings of other family members or other children

     1   2   3

24. Has recurrent episodes of a few days with extremely high activity level and

flight of ideas

1   2   3

25. Has recurrent periods of obvious irritability

1   2   3

Adapted from the 5-15 Questionnaire for Evaluation of Development and Behaviour (Questions

149-173)

Appendix G

Emotional Skills Survey (Post Chaos)

Please answer these questions in terms of your child and his interactions **after** the removal of

school and COVID-19.

Answer from a scale of 1 to 3.

 (1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies

Circle Answer.

1. Poor self-confidence

     1   2   3

2. Seems to be unhappy, sad, depressed

     1   2   3

3. Often complains about feelings of loneliness

     1   2   3

4. Has tried to inflict bodily damage to him-/herself or talks about that

       1   2   3

5. Has a poor appetite

       1   2   3

6. Often expresses a feeling of being worthless or inferior to other children

       1   2   3

7. Often complains about bellyaches, headaches, breathing difficulties or other bodily symptoms

       1   2   3

8. Appears tense and anxious or complains about being nervous school

1   2   3

9. Becomes very anxious or unhappy when leaving home e.g., when setting to

       1   2   3

10. Often has sleeping problems

       1   2   3

11. Often has nightmares

     1   2   3

12. Walks in sleep or has nocturnal attacks when he/she cannot be "reached" or comforted

1   2   3

13. Often loses temper

     1   2   3

14. Often argues with adults

     1   2   3

15. Often refuses to follow the instructions of adults

     1   2   3

16. Often teases others by deliberately doing things that are perceived as provocative

     1   2   3

17. Often blames others for own mistakes or bad actions

     1   2   3

18. Is easily offended, or disturbed by others

      1   2   3

19. Often gets into fights

      1   2   3

20. Is cruel to animals

      1   2   3

21. Lies and cheats

      1   2   3

22. Steals things at home

      1   2   3

23. Often destroys the belongings of other family members or other children

      1   2   3

24. Has recurrent episodes of a few days with extremely high activity level and

flight of ideas

        1   2   3

 25. Has recurrent periods of obvious irritability

        1   2   3

Adapted from the 5-15 Questionnaire for Evaluation of Development and Behaviour (Questions

149-173)

Appendix H

Cognitive Measuring (Pre-Chaos)

Please answer these questions in terms of your child and his interactions **prior to** the removal of school and COVID-19.

Answer from a scale of 1 to 3.

(1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies

Circle Answer.

Motor skills - gross motor skills; the child´s use of his/her body in various activities

1. Difficulty acquiring new motor skills, such as learning how to ride a bike, skate,swim.

    1   2   3

2. Difficulty throwing and catching a ball

    1   2   3

3. Difficulty running fast and smoothly

1   2   3

4. Has difficulties or does not like to participate in game sports such as soccer/football, land hockey

1   2   3

5. Balance problems; for instance, has difficulty standing on one leg

1   2   3

6. Often stumbles and falls

1   2   3

7. Clumsy or awkward movements

1   2   3

Motor skills - fine motor skills; the child's use of his/her hands:

8. Does not like to draw, has difficulties drawing figures that represent something

1   2   3

9. Difficulty handling, assembling and manipulating small objects

1   2   3

10. Difficulty pouring water into a glass without spilling

        1   2   3

11.Often spills food onto clothes or table when eating

        1   2   3

12. Difficulty using knife and fork

        1   2   3

13. Difficulty buttoning or tying shoe-laces

        1   2   3

14. Difficulty using a pen (e.g., presses too hard, hand is shaking)

        1   2   3

15. Has not developed clear hand preference, i.e., is neither clearly right-handed nor left-handed

        1   2   3

16. Writing is slow and laborious

        1   2   3

17. Immature pencil-grip, holds the pen in an unusual manner

1   2   3

Do problems with motor function interfere with your child's daily function?

1. Not at all   2. A little   3. Pretty much   4.Very much

Attention and concentration: the child's ability to pay attention and to concentrate on various tasks and activities:

18. Often fails to pay close attention to details or makes careless mistakes (in schoolwork, work assignments, or other activities)

1   2   3

19. Often has difficulty sustaining attention in tasks or play activities

1   2   3

20. Often does not seem to listen when spoken to directly

1   2   3

21. Often does not follow instructions and fails to finish schoolwork, chores, or duties (not due to oppositional behaviour or failure to understand instruction)

1   2   3

22. Often has difficulty organizing tasks and activities

1   2   3

23. Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as homework)

1   2   3

24. Often loses things necessary for tasks or activities (e.g., toys, school equipment, pencils, books, or tools)

1   2   3

25. Is often easily distracted by extraneous stimuli (e.g., irrelevant sounds like other people talking, cars driving by)

1   2   3

26. Is often forgetful in daily activities

1   2   3

Overactivity and impulsivity; the child's tendency to be too active or impulsive:

27. In constant motion (squirms in seat, fidgets with fingers, plucks at things etc)

1   2   3

28. Difficulty remaining seated (squirms in seat gets up and moves about

      1   2   3

29. Often runs about or climbs excessively in situations in which is inappropriate (in older children or adolescents this may be limited to subjective feelings of restlessness)

      1   2   3

30. Difficulty playing calmly and quietly

      1   2   3

31. Is often "on the go" or often acts as if "driven by a motor"

      1   2   3

32. Often talks excessively

      1   2   3

33. Often blurts out answers before the question has been completed

      1   2   3

34. Difficulty awaiting turns (in games, during meals etc)

1   2   3

35. Often interrupts or intrudes on others (e.g., butts into conversations or games)

1   2   3

Comprehension of spoken language; the child's ability to understand language and speech:

36. Difficulty understanding explanations and instructions

1   2   3

37. Difficulty following and comprehending stories read aloud

1   2   3

38. Difficulty perceiving what other people say (often says "what?", "what do you mean?")

1   2   3

39. Difficulty with abstract concepts such as "the day after tomorrow", "in the right order"

1   2   3

40. Tends to misinterpret what is said

1   2   3

Expressive language; the child's ability of language expression and to pronounce words:

41. Uncertain of speech sounds and tends to misarticulate words

      1   2   3

42. Difficulty learning the names of colours, people, letters etc

      1   2   3

43. Difficulty finding words or explaining to other people, says: "the, the, the ..."

      1   2   3

44. Difficulty explaining what he/she wants

      1   2   3

45. Difficulty speaking fluently without any breaks

      1   2   3

46. Stutters

      1   2   3

47. Speaks rapidly, making it difficult to understand

      1   2   3

48. Difficulty expressing himself/herself in complete sentences

   1   2   3

 Adapted from the 5-15 Questionnaire for Evaluation of Development and Behaviour (Questions 1-35, 71-92)

Appendix I

Cognitive Measuring (Post Chaos)

Please answer these questions in terms of your child and his interactions **after** the removal of

school and COVID-19.

Answer from a scale of 1 to 3.

(1) Does not apply, (2) Applies sometimes/ to some extent, (3) Applies

Circle Answer.

Motor skills - gross motor skills; the child´s use of his/her body in various activities

1. Difficulty acquiring new motor skills, such as learning how to ride a bike, skate,swim.

     1   2   3

2. Difficulty throwing and catching a ball

     1   2   3

3. Difficulty running fast and smoothly

     1   2   3

4. Has difficulties or does not like to participate in game sports such as soccer/football, land

hockey

     1   2   3

5. Balance problems; for instance, has difficulty standing on one leg

      1   2   3

6. Often stumbles and falls

      1   2   3

7. Clumsy or awkward movements

      1   2   3

Motor skills - fine motor skills; the child's use of his/her hands:

8. Does not like to draw, has difficulties drawing figures that represent something

      1   2   3

9. Difficulty handling, assembling and manipulating small objects

      1   2   3

10. Difficulty pouring water into a glass without spilling

      1   2   3

11.Often spills food onto clothes or table when eating

      1   2   3

12. Difficulty using knife and fork

      1   2   3

13. Difficulty buttoning or tying shoe-laces

      1   2   3

14. Difficulty using a pen (e.g., presses too hard, hand is shaking)

      1   2   3

15. Has not developed clear hand preference, i.e., is neither clearly right-handed nor left-handed

      1   2   3

16. Writing is slow and laborious

      1   2   3

17. Immature pencil-grip, holds the pen in an unusual manner

      1   2   3

Do problems with motor function interfere with your child's daily function?

1. Not at all   2. A little   3. Pretty much 4.Very much

Attention and concentration: the child's ability to pay attention and to concentrate on various tasks and activities:

18. Often fails to pay close attention to details or makes careless mistakes (in schoolwork, work assignments, or other activities)

    1   2   3

19. Often has difficulty sustaining attention in tasks or play activities

    1   2   3

20. Often does not seem to listen when spoken to directly

    1   2   3

21. Often does not follow instructions and fails to finish schoolwork, chores, or duties (not due to oppositional behaviour or failure to understand instruction)

    1   2   3

22. Often has difficulty organizing tasks and activities

    1   2   3

23. Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as homework)

     1   2   3

24. Often loses things necessary for tasks or activities (e.g., toys, school equipment, pencils, books, or tools)

     1   2   3

25. Is often easily distracted by extraneous stimuli (e.g., irrelevant sounds like other people talking, cars driving by)

     1   2   3

26. Is often forgetful in daily activities

     1   2   3

Overactivity and impulsivity; the child's tendency to be too active or impulsive:

27. In constant motion (squirms in seat, fidgets with fingers, plucks at things etc)

     1   2   3

28. Difficulty remaining seated (squirms in seat gets up and moves about

     1   2   3

29. Often runs about or climbs excessively in situations in which is inappropriate (in older children or adolescents this may be limited to subjective feelings of restlessness)

    1   2   3

30. Difficulty playing calmly and quietly

    1   2   3

31. Is often "on the go" or often acts as if "driven by a motor"

    1   2   3

32. Often talks excessively

    1   2   3

33. Often blurts out answers before the question has been completed

    1   2   3

34. Difficulty awaiting turns (in games, during meals etc)

    1   2   3

35. Often interrupts or intrudes on others (e.g., butts into conversations or games)

1   2   3

Comprehension of spoken language; the child's ability to understand language and speech:

36. Difficulty understanding explanations and instructions

    1   2   3

37. Difficulty following and comprehending stories read aloud

    1   2   3

38. Difficulty perceiving what other people say (often says "what?", "what do you mean?")

    1   2   3

39. Difficulty with abstract concepts such as "the day after tomorrow", "in the right order"

    1   2   3

40. Tends to misinterpret what is said

1   2   3

Expressive language; the child's ability of language expression and to pronounce words:

41. Uncertain of speech sounds and tends to misarticulate words

1 2 3

42. Difficulty learning the names of colours, people, letters etc

1 2 3

43. Difficulty finding words or explaining to other people, says: "the, the, the ..."

1 2 3

44. Difficulty explaining what he/she wants

1 2 3

45. Difficulty speaking fluently without any breaks

1 2 3

46. Stutters

1 2 3

47. Speaks rapidly, making it difficult to understand

1 2 3

48. Difficulty expressing himself/herself in complete sentences

1 2 3

Adapted from the 5-15 Questionnaire for Evaluation of Development and Behaviour (Questions

1-35, 71-92)

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