RELATIONSHIP BETWEEN PARENTAL AND CHILDREN'S SCREEN TIME AT HOME

by

Yangjin Liu

B.A., Qufu Normal University, 2001

M.A., Shandong University, 2004

Ph.D., Shandong University, 2007

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES

(Early Childhood Education)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

October 2021

The following individuals certify that they have read, and recommend to the Faculty of Graduate and Postdoctoral Studies for acceptance, the thesis entitled:

Relationship between Parental and Children's Screen Time at Home

submitted by Yangjin Liu in partial fulfillment of the requirements for

the degree of Master of Arts

in Early Childhood Education

Examining Committee:

Andreea Cervatiuc, Language and Literacy Education, UBC
Supervisor

Meghan Corella, Language and Literacy Education, UBC
Supervisory Committee Member

Laurie Ford, Early Childhood Education, UBC
Additional Examiner

Abstract

Children's screen time is connected with factors at intrapersonal, interpersonal, organizational, community, and other levels. Parental screen time in the family environment with children's presence is likely to have relationship with children's screen time. To advance the understanding of the relationship between parental and children's screen time at home, a qualitative study was conducted to explore what parents' screen time experiences were at home and how they experienced their screen time while their children were present at home, employing a phenomenological approach. Eight participants, who were parents of children in the first year of schooling, were recruited for interviews to share their experiences. The qualitative data analysis tool, NVivo, was used to analyze the data by coding and thematizing the significant statements identified in the data. Textural and structural analyses of individual participants' screen time were reported in this study, so that the realities of parental screen time were revealed in detail. A discussion of parental and children's time at home and their screen time at home were reported to explore what influenced parental screen time at home and what influences parental screen time had in the family environment while their children in the first year of schooling were at home. Discussions of the reasons for screen time and measures to control screen time were also included in this study intending to explore the ways to keep screen time for the purpose of entertainment at low level. It is pointed out that parental screen time for entertainment is one factor for children's screen time for entertainment, and limited parental attention for their children is another factor in the family environment to influence whether parents give their children screen time for entertainment.

Lay Summary

Parents of children in the first year of schooling were interviewed to gain an understanding of parental screen time experiences at home in the presence of their children. Parents' accounts of their experiences included what their screen time was and the contexts in which their screen time occurred. Parents' screen time experiences indicated connections between parental and children's screen time. The findings showed that parents had screen time at home for study, work, occasional communication and entertainment, and their screen time for entertainment was kept at a minimum level. Children had screen time at home for study and entertainment, and their screen time for entertainment usually occurred when parents had limited time and attention to them. Parental and children's screen time did not necessarily co-occur. The way to reduce children's excessive screen time is to find substitute activities for children when parents could not spare time and attention to them.

Preface

This thesis is original, unpublished, independent work of the author, Yangjin Liu, under the supervision of Dr. Andreea Cervatiuc. This research was approved by the Behavioural Research Ethics Board of the University of British Columbia under the UBC BREB number H18-02107.

Table of Contents

List of Figures

Acknowledgements

I would like to express my sincere gratitude to the participants, who have spent valuable time sharing their experiences and insight in their screen time at home, and others who have helped during this study. Without their help, this thesis would not have come into the present form.

I would like to extend my heartfelt gratitude to Dr. Andreea Cervatiuc, my supervisor. I am indebted to her for her guidance and encouragement throughout my study, and her encouragement has been the source of strength during the process of this study. I am in awe of her brilliance as a scholar and her insights into research, and her valuable suggestions have led to improvements of this study. I am also grateful for the flexibility she allows me in pursuing my degree, so that I achieved balance between study and family.

Special thanks are owed to Dr. Meghan Corella, my Supervisory Committee member, and Dr. Laurie Ford, the arm's length examiner for the final thesis. They gave me valuable comments on the thesis, from which I draw inspirations to revise the drafts of this thesis.

My sincere gratitude goes to Dr. Iris Berger, Dr. Mari Pighini, and other faculty members, whose courses, lectures and talks introduced me into the academic world of early childhood education. Dr. Iris Berger not only guided me through my study, but also helped me a lot during the hard times in my life and provided me with suggestions for career options at the end of my program to guide me forward in the field of early childhood education.

I owe my gratitude to Dr. Erica Bennett and Dr. Douglas Adler, from whom I have

received professional trainings in research methodology. They enlightened me on the ways to carry out studies, and provided valuable suggestions to help me improve the research methodology. Dr. Adler's introduced both quantitative and qualitative research methods. Dr. Bennett focused on qualitative research methods, and I learned from her course how to be qualitative in the study. In addition to the theories, I also learned the different tools used in qualitative studies, which facilitated the process of the current study.

I would like to express my sincere thanks to Dr. Laurie Ford, Vicki Domansky, and other staff members who have worked in the Centre for Early Childhood Education & Research. Their work contributed a lot to the success of my MA program. Dr. Ford and Vicki showed great concern for my progress and spared valuable time to ensure that everything went on well with me. I really appreciate what they have done.

My deep appreciation also goes to my sister-in-law, who has helped me with data collection. Without her help, I would not have finished the data collection so smoothly, and this study would not have been based on such solid data.

Last but not least, I would like to express sincere thanks to my family and relatives, who have been supporting me throughout the whole process of my study. My husband has been supporting me, encouraging me, and accompanying me through the good and the bad, and he has sacrificed a lot helping taking care of our family. My two children added to the joy of my study experience, and they gave me the opportunity to grow as a responsible parent. My parents and sister supported my decision to pursue the degree here, and have been supporting me in my study and life throughout the whole process. Without their support, encouragement and love, I could not have achieved all these.

Chapter 1: Introduction

Children's well-being should be the primary consideration when dealing with issues related to children (United Nations Office of the High Commissioner for Human Rights, 1990). Among the research topics concerning children's well-being, excessive screen time has attracted the attention of parents, teachers, pediatricians and other professionals in the field of early childhood education. Screen time is related to children's physical and mental health, is connected with children's behaviour, and is believed to be associated with children's academic performance (Saunders & Vallance, 2017). Research in this field tries to figure out the detrimental effects of excessive screen time and ways to reduce children's screen time and tries to avoid its negative influences. It is important to use screen devices wisely and to exert the positive influence of screen time to promote children's wellbeing.

1.1 An Overview of Children's Screen Time

Research has shown that at the present time children start to regularly interact with screen media when they are four months old, but they started to use screen media at age four in 1970 (Radesky & Christakis, 2016). Screen time is considered to threaten children's well-being (Duncan et al., 2012) both physically and psychologically (Davison & Birch, 2001), but is a potentially modifiable determinant of sedentary behaviour among children (van Zutphen et al., 2007). Studies have also shown that screen time increases dramatically during the first three years of children's life, and remains roughly stable in preschool, forming a routine behaviour, which lasts throughout school age, adolescence, and even adulthood (Zhao et al., 2018). Studies of screen time in children of or before school age, therefore, have significant implications for children's well-being (Daugherty et al., 2014; Hinkley et al., 2012).

Children face challenges of excessive screen time because a large proportion of them use screen devices for longer time than what is recommended by both the American Academy of Pediatrics (AAP) and Canadian Society for Exercise Physiology (CSEP). Screen time is not recommended for children under two years of age, should be limited to one hour per day for children 2-4 years of age, and should be limited to no more than two hours per day for children 5-11 years of age (CSEP, 2017). However, the fact is that the majority of children are exposed to screen devices for longer periods than what CSEP recommends, with 74%-85% of preschoolers spending more than one hour per day and 53%-75% of them spending more than two hours per day on screen devices (Zhao et al., 2018). Another study on children at 29 months of age shows that 30% of children have more than 2 hours of TV time per day (Pagani et al., 2013). Atkin et al. (2014) also reported that about two-thirds of children recruited from different countries in their study spent more time on screen devices failing to meet the guidelines for screen time. Having more screen time than recommended, children are faced with the potential negative effects of excessive screen time.

Issues related to screen time have become complicated because of the development of new screen devices (Domingues-Montanari, 2017). Most of the published studies have focused on TV, the traditional type of screen devices; other forms of screen devices have not been fully investigated, especially the recently developed interactive screen media, such as computers, smartphones and tablets, the effects of which are not fully explored (Radesky & Christakis, 2016). The interactive screen media can be used for different purposes and users sometimes interact with the screen devices, no longer being passive recipients of information. Little is known about whether the newly developed interactive screen devices affect children and how they influence children if there are influences. Studies need to reveal more

information in these aspects.

It is believed that forming healthy screen behaviour in early childhood may have significant implications for health and wellness throughout a person's lifetime, since the habits formed during the first years of a person's life persist into adulthood (Zhao et al., 2018). A large number of studies have been done on screen time based primarily on the traditional screen device, TV, and research findings show that excessive screen time has negative effects on children's health (Lipnowski et al., 2012), and cognitive and social emotional development (Carson, Kuzik, et al., 2015; Dietze & Kashin, 2012), although it is accepted that well-designed interactive media programs can be educational for children in preschool or older if children are appropriately guided by their caregivers (Radesky & Christakis, 2016).

1.2 Purpose of the Study

A review of relevant literature shows that there are gaps in the research on children's screen time. First, few studies explore the reasons why children are exposed to excessive screen time, which leads to further physical, social and mental problems in children (Saunders & Vallance, 2017). In addition, the choice of the theme for this study, the relationship between parental and children's screen time at home, is also inspired by problems parents have with their children. Research interests in the academic field coexist with concerns of parents, who frequently complain that their children are addicted to screen devices (Chwaszcz et al., 2018; Wu et al., 2016) to the extent that the screen devices even interfere with children's homework after school (Li et al., 2017). At the same time, even casual observations in public places serve as reminders that parents are often hooked to screen devices, sparing little time and attention for their children playing by themselves or

attracted by their parents' screen devices at the same time. Advances in technology also add to the complexity of the issue when more types of screen devices are popular and become integrated into people's lives. In studies on the reasons for children's increased screen time, researchers suggest that parents reduce their screen time in order to reduce children's screen time (Xu et al., 2015). This might be a good suggestion in theory, but is it practical when screen device becomes an inseparable part of life, especially when parents need to work or study with it at home? What is more, the conclusion that parental screen time is positively associated with children's screen time comes from a systematic review of quantitative studies (Xu et al., 2015). This indiscriminate conclusion gives no consideration to what and how parents' screen time is and whether it is practical to reduce parental screen time in order to reduce children's screen time. In order to explore more useful, practical and effective suggestions to deal with children's increased screen time, this study is intended to reveal more information about parental screen at home with the presence of their children. The results and findings show what parental screen time is and how parents experience screen time at home with the presence of their children. The results and findings reveal how parental screen time is related to their children's screen time at home.

1.3 Research Questions

The research questions that will be addressed in this study are the following:

1) *What is parents' experience of screen time with the presence of their children at home?*
2) *How do parents experience their screen time with the presence of their children at home?*

The research questions address several aspects related to parental and children's screen time,

which have not been fully investigated, making this study stand out from others.

First, this study includes screen devices (TVs, video games, computers, smartphones, and tablets) that cover most of the screen devices used at homes nowadays. Since the interactive screen media have not been fully studied (Radesky & Christakis, 2016), the inclusion of the newly developed interactive screen devices in this study will provide insights into the ways they function in modern life and especially in children's life. It also paves the way for further quantitative studies on how much the interactive screen media affect children.

This study focuses on the family environment, where parental screen time often co-occurs with their children's. It is argued that children's health behaviours develop in an ecological niche, among which family environment has a critical influence (Davison & Birch, 2001; Tandon et al., 2012). This is true for children in early childhood and at school age, roughly from birth to eight years of age, when children are mainly influenced by their caregivers and when children's media use habits are mainly influenced by their caregivers (Radesky & Christakis, 2016). However, there is a lack of studies on the familial factors that influence children's screen time at home (Barroso et al., 2020). Therefore, a study of one of the screen time determinants, parental screen time, in the family environment is expected to bring insightful results on the issue under study.

The focus on parental experience of their screen time reveals what really happens in terms of parental and children's screen time at home. This study shows what parents do with their screen devices when their children are at home, and in what situations they have screen time. The situations in which parents experience their screen time include accounts of children's activities when parents have screen time. The analysis of the situations will indicate whether there are connections between parental and children's screen time at home

and will shed light on the causes of children's screen time. Although some studies have shown that there is a positive correlation between parental and children's TV time (Barr-Anderson et al., 2011; Davison et al., 2005), a search of literature reveals that only a limited number of qualitative studies have been done to explore screen time realities (Barroso et al., 2020), potential factors leading to increased screen time in children, and the relationship between parental factors and children's screen time. The current study focuses on the gaps in literature, examining the screen time realities in the home environment.

1.4 Key Terms

To better understand the terms used throughout this thesis, definitions of the following terms are provided.

1.4.1 Screen Time

Screen time in this study refers to the time spent on the screen devices, which include TV, video game, computer, smart phone, and tablet. In addition to the traditional meaning of screen time, which referred exclusively to TV time, screen time in this study includes the time spent on the newly developed interactive screen devices that are used in households nowadays.

1.4.2 Early Childhood

According to the definitions given by the government of British Columbia and the United Nations Educational, Scientific and Cultural Organization (UNESCO), early childhood refers to the period from birth to age eight. During this period, children experience remarkable growth. UNESCO also highlights that children in this period are influenced by the environment and the people that surround them.

1.5 Organization of the Thesis

This thesis consists of six chapters. This first chapter serves as an introduction of the research topic. An overview of children's screen time has revealed that children face challenges in having more screen time than recommended and the newly developed interactive screen devices make children's screen time a more complicated question.

Chapter 2 contains the literature review for this study. The review includes three aspects. A review of the effects of screen time on children's health shows that it is important to carry out studies on children's screen time and to discover effective solutions to deal with children's excessive screen time. A review of the studies on the reasons for screen time shows that some attempts to explore the reasons for children's increased screen time have been made, but with unsatisfactory findings. The review also justifies the study on the realities of screen use in the home environment, the finding of which should be practical and more effective in reducing children's screen time. This chapter also includes a review of the theories that have been adopted to explain human behaviours; these theories can also be used to explain screen behaviours. Based on the review of the theoretical models, the theoretical framework of this thesis is outlined.

Chapter 3 explains the methodology and methods used in this study. This study is a qualitative one, employing a phenomenological approach. The participants of this study were parents of children in the first year of schooling (Y1 children), who were recruited through purposeful sampling. After the participants were recruited and gave consent, semi-structured interviews were conducted to collect data. The participants shared their experience of how they used screen devices at home. The interviews were audio-recorded and transcribed verbatim afterwards, using the transcription software Express Scribe. The analysis adopted

the Stevick-Colaizzi-Keen method modified by Moustakas (1994) and Creswell and Poth (2018). Six themes emerged from the data analysis: Children's screen time activities, children's non-screen activities, parental screen time activities, parental non-screen time activities, limitation measures to reduce screen time, and reasons for screen time.

Chapter 4 reports the results of the study, which are textural and structural descriptions of each participant's experiences. The profiles of the eight participants provide a general understanding of what parents do during their screen time and in what contexts they have their screen time when their Y1 children are at home. The contexts of parental screen time include information of what children really do during parents' screen time.

Chapter 5 discusses the findings formulated inductively in the data analysis, including the composition of parental time, the composition of children's time, the composition of parental screen time and the composition of children's screen time. When parents have screen time at home, explorations are made to show what children do, and the coexistence of parental and children's screen time indicates the relationship between them. Measures to reduce children's screen time can be developed purposefully according to the specific situations. There are occasions when children have screen time but parents do not, so parental activities are also examined when children have screen time. The discussions show in what situations parents give children screen time, and potential measures can be worked out to deal with different situations. In addition, measures to limit screen time and reasons for screen time in the family environment are also discussed in this chapter. The measures adopted by parents show how effective they are in controlling children's screen time and can give insights into future potential measures. The reasons for screen time at home indicate what other factors are involved in modifying children's screen time. These reasons can serve

as the directions for future studies. This chapter also includes a discussion of the strengths and limitations of this study, and the directions for future studies. Based on the finding of this qualitative study, quantitative studies are expected to disclose how strong the factors identified in this study are related to children's screen time. The combination of a qualitative study and a quantitative one will push forward the boundaries in the study of children's screen time and give insights into the way parents can use screen devices wisely at home.

The conclusion chapter provides a summary of parental experiences at home and the situations in which parents have screen time with the presence of their children at home.

Chapter 2: Literature Review

The United Nations (UN) published *Convention on the rights of the child* [CRC] in 1989, claiming that the best interests of the child shall be a primary consideration in all actions concerning children (United Nations Office of the High Commissioner for Human Rights, 1990). In order to achieve the physical and mental health described in CRC, children are encouraged to live an active life, getting involved in moderate-to-vigorous physical activities (Hinkley et al., 2012). The World Health Organization recommends that children between 5 and 17 years of age get involved in moderate-to-vigorous physical activities for at least 1 hour per day (Domingues-Montanari, 2017). The longer they are physically active, the more health benefits they will have. However, many factors prevent children from living a physically active life. One of the detractors is the sedentary lifestyle of today's society and one salient contributing factor is the increasing sedentary recreational time spent on screen devices (Määttä et al., 2017; Salmon et al., 2005), watching television, playing video games, and using a computer, a smartphone or a tablet for entertainment. Sedentary behaviour has been identified to be a distinct health risk (Owen et al., 2011), and 8 hours of sedentary screen time per day, in particular, have been reported to be associated with overweight and obesity in children and adolescents (Lanningham-Foster et al., 2006; Prentice-Dunn & Prentice-Dunn, 2012) and have become an important issue in public health (Pearson & Biddle, 2011; Saunders & Vallance, 2017). Researchers have carried out studies to explore sedentary behaviours hoping that children could live a healthy lifestyle, and recommended that screen time should be limited to ensure that children have enough time for physical activities and that children should spend at least 30 to 60 minutes per day performing physical activities (Sallis et al., 2000).

According to Radesky and Christakis (2016), researchers have been studying TV time for several decades, but the development of new screen media, such as smart phones, tablets, etc., has created new situations in recent years. For the purposes of this study, screen time refers to time spent using devices with a screen including TVs, video games, computers, smart phones, and tablets.

2.1 Effects of Screen Time on Children's Health

Excessive screen time has negative effects on children's health (Lipnowski et al., 2012; Vizcaino et al., 2020), and children are encouraged to engage in physical activities and live an active lifestyle (Duncan et al., 2012). It is documented in studies on TV time that excessive TV time is associated with poor physical and psychosocial health (Davison et al., 2005). Although the benefits of physical activity in children are less well documented than those in adults, the positive effects are clear in aerobic fitness, blood lipids, blood pressure, body composition, glucose metabolism, skeletal health, and psychological health (Sallis et al., 2000). Declines in physical activities and increases in sedentary lifestyle are directly related to health problems such as overweight and obesity (Davison & Birch, 2001; Wunsch et al., 2021), which can lead to increased potential risk factors associated with heart disease, high blood pressure, diabetes, etc. (Buchanan et al., 2016; Lipnowski et al., 2012). It is also reported that excessive screen time can cause language delay (Lagercrantz, 2016), and is related to aggressive behaviour (Manganello & Taylor, 2009; Stearns et al., 2017), attention span, and cognitive development (Christakis, 2009; Hu et al., 2020). A longitudinal study shows that television viewing time is negatively associated with children's school readiness in the aspects of vocabulary, number knowledge, classroom engagement, gross motor locomotion, and the potential victimization by classmates (Pagani et al., 2013).

Screen time does have positive functions, but a rational attitude should be adopted toward it. Although it is documented that screen time has positive effects, such as broadening children's knowledge and increasing imaginativeness (Thakkar et al., 2006), strict conditions should be provided for the positive effects to occur (Lagercrantz, 2016), including the duration of exposure to screen devices, program content, etc. Thakkar et al. (2006) pointed out that children could benefit from educational television programs, but 75% of the television content that children watch is not educational (Fitzpatrick et al., 2012). No positive effects of screen time should be discussed without conditions for them to come true.

2.1.1 Screen Time and Physical Health

Researchers have been working on the potential relationships between screen time and children's physical health, and most studies show that excessive sedentary time has detrimental effects on children's health. Physical strength is adversely affected by longer TV time irrespective of physical activity (Edelson et al., 2016). The gross motor skills are reduced in children with long screen time (Pagani et al., 2013). Insufficient sleep and sleep difficulties are reported to be associated with the use of screen devices (Brindova et al., 2015). Symptoms of different types, such as headaches and backaches, have been reported to be connected with specific types of screen devices (Domingues-Montanari, 2017).

One of the concerns of increased screen time is childhood overweight, which has become a prevalent issue among children (Zhang et al., 2016; Fang et al., 2019). It is reported that 17% of US children between 2 and 19 years of age are overweight and that nearly another 17% are at the risk of being overweight (Rhee, 2008). Duncan et al. (2012) examined the relationship between people's physical activity, screen time, and overweight in modern society and revealed the need to increase levels of both moderate-to-vigorous

intensity and light intensity physical activities and the need to decrease screen time. Toddlers between 2 and 4 years are more likely to be obese if they have more than 2 hours of TV time per day (Twarog et al., 2015), the recommended maximum daily screen time by AAP. Van Zutphen et al. (2007) also reported that being overweight was closely connected with more TV time, with a 13% increase in obesity risk for every hour of TV viewing per day, and that reduction in TV viewing time resulted in reduction in body mass index (Zhang et al., 2016). Wen and colleagues (Wen et al., 2014) studied the screen time of 2-year-olds and found that a one-hour increase in their weekly total screen time predicted increases in body mass index. Sedentary behaviour, such as TV viewing, is one of the reasons leading to overweight (Davison & Birch, 2001). Compared with children without a TV in their bedroom, children who have a TV in their bedroom have a higher adiposity rate (Chaput et al., 2014). Based on the findings of these studies, screen time is considered to be an important modifiable risk factor for childhood obesity (Domingues-Montanari, 2017).

There are contradictory findings about the relationship between screen time and overweight. Marshall et al. (2004) carried out a meta-analysis of previous studies on the relationship between TV viewing and obesity and reported that there was a statistically significant relationship between the two factors which should not be overstated to be strong or conclusive because there might be other behaviours accompanying TV viewing that contribute to obesity. They also claimed that the relationship was too small to be of substantial clinical relevance. Chaput et al. (2014) explored the relationship between the number and types of electronic screens in children's bedrooms and their physical activity and sleep, and suggested that screen devices in general should not be blamed for children's obesity. The presence of TV in children's bedrooms is related to children's overweight, but

the presence of computers in children's bedrooms does not matter so much in children's obesity. The inconsistent findings reveal that more studies are required to explore children's screen time.

It is widely acknowledged that overweight and obesity have further health consequences and negative psychological outcomes (Davison & Birch, 2001; Saunders & Vallance, 2017). Page et al. (2010) reported that overweight was positively related to psychological difficulties. There is a higher risk for obese children and adolescents to have psychological and social adjustment problems (Schwimmer et al., 2003). Since overweight and obesity have been reported to be related to screen time (Twarog et al., 2015; van Zutphen et al., 2007), it is reasonable to say that screen time is related to psychological and social problems in children. Therefore, it is justified to study screen time with the intention to reduce overweight and further problems caused by overweight.

Actions to reduce screen time have been reported to be an effective measure to control childhood obesity (Falbe et al., 2013; Fang et al., 2019; Gortmaker et al., 1999). Some studies on TV time have shown that reduction in TV time can effectively reduce childhood obesity and is considered to be a promising population-based approach to control the world-wide obesity epidemic (Robinson, 1999; Gortmaker et al., 1999; Falbe et al., 2013). Some scholars distinguished between sedentary and active screen time (Lanningham-Foster et al., 2006) and discovered that energy expenditure more than doubled when sedentary screen time was replaced with active screen time. Sedentary screen time refers to the time spent in watching television seated and playing the traditional video games seated, and active screen time means the time spent in watching television while walking on a treadmill and play activity-promoting video games which involve body movement during the game. Based on

the findings of this study, it is recommended that activity-based screen time be used to prevent childhood overweight and obesity (Lanningham-Foster et al., 2006).

2.1.2 Screen Time and Social Emotional and Cognitive Development

Children's social and emotional development means their ability to manage and express emotions and to develop relationships with others (Hendry, 2017). Research has indicated that screen time affects children's cognitive and social emotional development (Carson, Kuzik, et al., 2015; Lagercrantz, 2016). Studies on TV time, one form of screen time, have revealed that excessive TV time could slow down brain development and interfere with the development of cognitive skills and social skills (Pagani et al., 2013). Evidence from another study claims that children's socioemotional adjustment abilities at school entry vary according to their TV time in early childhood before school entry (Mistry et al., 2007). On the other hand, children's play, which can be social-dramatic play, free play, or child-directed play, greatly promotes their social and emotional development (Gibson et al., 2017). Children's social and emotional developments occur during their play with other individuals (Hendry, 2017), and it makes sense that their social and emotional development is undermined when they have excessive screen time during which solitary play overshadows social play. Fedewa and Ahn (2011) reviewed 59 studies on the relationship between children's physical activity and their academic achievement and cognitive outcomes between 1947 and 2009, and reported that children's academic achievements and cognitive outcomes were positively correlated with their physical activity. When children are engaged in screen time, they will reduce the time allotted to physical activities which are actually learning processes, during which children actually develop their social skills (Dietze & Kashin, 2012). Reduced time in physical activities means limited chances in social development and,

therefore, has overall negative effects on children's social emotional development (Hendry, 2017).

Other studies concerning the relationship between children's social emotional and cognitive wellbeing and screen time have different findings, with some researchers even finding that screen time has positive effects on children's development. A study on teenagers shows that screen time has positive social effects on teenagers who make friends with others through social media (O'Keeffe et al., 2011). MacGowan and Schmidt (2021) reported a positive correlation between screen time and girls' social cognitive development in their study. Gorely et al. (2004) reported in their review of TV viewing correlates that there was no relationship between TV time and psychological factors, such as cognitive functioning, self-perceptions and emotional support. Carson, Kuzik, et al. (2015) systematically reviewed studies on the relationship between different types of sedentary behaviours, which include screen time, and cognitive development during early childhood, and reported that there were inconsistent results on the functions of screen time in cognitive development, the vast majority of which agreed that screen time had either no effect or a detrimental effect on cognitive development during early childhood.

Screen time is also connected with children's language development. The reason why linguistic behaviour is included in children's social emotional and cognitive development is that language is considered to be a cognitive ability which is not fundamentally different from other cognitive abilities, according to cognitive linguistics (Croft & Cruse, 2004). Evidence in children's language development supports the view that screen time affects children's development. Byeon and Hong (2015) reported that screen time was positively related to the risk of language delay of two-year-old children, claiming 2.7 times higher risk

of language delay with 2-3 hours of TV time per day and 3 times higher risk of language delay with over 3 hours of TV time per day compared with children having less than 1 hour of TV time per day. However, other studies claim that screen time promotes language development, but the positive relationship occurs only between specific TV programs and language development at certain age (Linebarger & Walker, 2005; Madigan et al., 2020). Strict conditions are required for the positive influence of screen time on children's language development to occur, that is, only certain programs promote language development in children of a specific age.

It is important to emphasize the role of conditions in bringing about benefits of screen time. One of the commonly-discussed conditions is the content of screen time. Children's cognitive development can be promoted by well-designed media (Domingues-Montanari, 2017). Children's visual attention skills can be improved if they play action-based video games, and prosocial behaviours can be encouraged if children play prosocial video games in which the game characters help each other and serve as role models for children (Gentile et al., 2009; MacGowan & Schmidt, 2021). The language development of children of specific age can be promoted by well-designed high-quality programs. Another condition which encourages the benefit of screen time is the presence of a co-viewer in screen time. Increase in children's cognitive development can be achieved from suitable media content when co-viewing with an adult occurs (Domingues-Montanari, 2017). Vocabulary acquisition improves in the presence of an adult co-viewer (Linebarger & Walker, 2005). It is important to discuss the influence of media use on children's cognitive development with due consideration of the conditions in which screen time takes place.

Screen time is related to children's psychological wellbeing. According to Page et al.

(2010) who conducted a study on 10- to 11-year-olds, children with more than 2 hours of combined use of TV and computer for entertainment purposes had an increased risk of high level of psychological difficulties which could worsen with less than 1 hour of physical activities. If their psychological wellbeing is threatened, children have problems with emotions, peers, concentration and conduct. Reduced screen time is a modifiable factor in promoting children's psychosocial wellbeing.

2.1.3 Screen Time and Aggressive Behaviours

Screen time is related to children's aggressive behaviours, another prominent question concerning children's well-being (Özmert et al., 2002; Wade et al., 2018). Television programs, movies and video games for children are reported to contain more violence than those for adults, and excessive exposure to media violence can lead to increased aggressive behaviours in children, insensitivity to violence and victimization of others, and the belief that the world is mean and scary (Akçay & Akçay, 2019; Robinson et al., 2001).

Children may become insensitive to violence and fail to feel sympathetic to the victims when they are exposed to violence in media (Fitzpatrick et al., 2012). In addition to reduced sensitivity to violence, more screen time with violent content leads to children's aggressive behaviours (Guerrero et al., 2019). It is reported that more than half of all the shows for children contain certain forms of violence (Hendry, 2017), so it is difficult to avoid violence during screen time. No matter how long children are exposed to violence during their screen time, there is an increase in teacher-rated antisocial behaviour several years later (Fitzpatrick et al., 2012). When children between the ages of 2 and 5 years old are exposed to violence in the media, they are more likely to be engaged in antisocial behaviours by age 8 (Christakis & Zimmerman, 2007) and an increased risk of having cold and uncaring behaviour in grade 2

(Fitzpatrick et al., 2012). Longer TV time at 2-3 years of age is related to an increased risk of peer victimization during early school years (Watt et al., 2015). There is a causal effect of media use (including television, videotape, and video game use) on children's aggressive behaviours (Robinson et al., 2001). A systematic review of the effects of media violence on viewers' aggression confirms that exposure to media violence does increase viewers' aggression (Akçay & Akçay, 2019; Wood et al., 1991). Results in other studies also show that children's aggressive behaviours are positively correlated with their television viewing time in general (Özmert et al., 2002). A reduction in children's media use decreases children's aggressive behaviours (Robinson et al., 2001).

Moreover, the media violence may influence children's mental models of behaviours and expectations in certain social contexts (Carnagey et al., 2007). Under the influence of violence in media, children might develop hostile behaviour styles because, according to the cognitive social learning model, exposure to aggressive acts in the media worked as models for children to learn aggressive behaviours and to use aggression to solve conflicts in life (Robinson et al., 2001).

Aggression in children caused by exposure to media violence has long-term effects (Fitzpatrick et al., 2012). A longitudinal study on children's aggressive behaviour shows that more aggressive children are more likely to have poor academic performance (Chen et al., 2010). Children's academic performance tends to stabilize in grade one (Entwisle et al., 2005), so it is meaningful to work on factors that might influence their academic performance. Researchers reveal that exposure to violent media content is also related to distractibility, inattention, and trouble concentrating in classroom settings, and all these lead to children's lower academic scores in grade 2 if they are exposed to violent media content in

early childhood (Fitzpatrick et al., 2012). In addition, aggressive children tend to have problems with their social skills. Aggressive children are more likely to have poor academic performance, which might cause them to be less popular among peers. This might influence their social skills.

Although there are studies with contradictory findings, most studies on the relationship between aggressive behaviours and media viewing time show that when children are exposed to violence in TV, their aggressive behaviours increase (Akçay & Akçay, 2019). Reflecting on the findings drawn from the studies on children's aggressive behaviours, it can be seen that aggression is determined by multiple factors and predicted by a variety of individual and social variables (Wade et al., 2018; Wood et al., 1991). Screen time is one of the variables, but it is modifiable and interventions are likely to reduce aggressive behaviours and potential negative effects.

2.1.4 Screen Time and Academic Achievements

It is believed that children's screen time is related to their school achievement with both positive and negative associations. Evidence shows that excessive screen time negatively influences children's academic performance (Fitzpatrick et al., 2012; Howie et al., 2020). Pagani et al. (2010) reported that children with longer TV time when they are 29 months old are less ready for school when they are 65 months old. They have limited vocabulary, poor number knowledge, and lower classroom engagement. A study on adolescents also shows that less screen time is positively related to higher academic achievement (Faught et al., 2019). Özmert et al. (2002) carried out a quantitative study among Grade 2 and Grade 3 students in Turkey, and reported that children's overall television viewing time is negatively correlated with their social and school achievement.

However, Palumbo and Dietz (1985) reported that TV time within a reasonable period could improve children's reading ability. The content of TV programs matters in the way that educational content helped to improve children's grades in school (Wright et al., 2001).

Screen time is related to factors that influence children's academic achievements. One of the factors is attention, which directly effects one's academic achievements (Shah & Saleem, 2015). Increased screen time is significantly related to decreased attention (Vigil, 2019). Screen time in early childhood between ages 1 and 3 is related to attention problems at age 7, such as short attention span, low levels of concentration, attention skills, etc. (Christakis et al., 2004). In addition, screen time is also reported to negatively influence children's memory skills if they are exposed to television before 3 years of age (Zimmerman & Christakis, 2005). With good attention or memory, children have better chances to achieve academic success.

2.2 Studies on the Reasons for Screen Time

In contrast to the large number of studies on the influence of screen time on children, a small number of studies have been done to examine the reasons for increased screen time in children (Carson & Janssen, 2012). The existing studies focus on individual factors, demographic factors, family environment factors, etc. (Bjelland et al., 2015). Stearns et al. (2017) reported that negative peer experience (peer victimization) was related to increased screen time in adolescents with obesity problems. Some scholars studied the effects of home environment on children's screen time and results showed that home environment was an important factor determining the amount of time children spent on screen devices (Määttä et al., 2017). Based on different research objectives and study designs, scholars identified different home environment variables, such as the number of meals children ate with TV on,

the number of TVs in the home, access to TV in children's bedrooms, access to other screen devices at home, the availability of a VCR at home, parental screen time, and family rules/regulation/limitation (D'Angelo & Moreno, 2019; Saelens et al., 2002; Totland et al., 2013; van Zutphen et al., 2007). Tandon et al. (2012) revealed that access to media in the bedroom, portable play equipment, and socioeconomic status of the family all affected children's screen time. Van Zutphen et al. (2007) had similar findings in their study; that is, compared with children without rules about TV viewing, children had much less TV time if there was tight rules governing TV viewing time in the family, or who never watched TV during dinner, or who had only one TV in the household or no TV in the bedroom. They even reported that access to TV could even predict TV time.

2.2.1 Availability of Screen Devices

Researchers have tried to understand how access to screen devices affects children's screen time. Such studies have revealed that screen devices in children's bedrooms or in the family are related to children's screen time, physical activities, obesity, and sleep (Chaput et al., 2014). Chaput et al. (2014) studied different types of screen devices and revealed the effects of the number and types of electronic screens on children's physical activity and sleep. The results of their study showed that children with 2 to 3 screen devices in their bedroom tended to have more screen activities during the day compared with their peers without screen devices in the bedroom (Chaput et al., 2014).

However, researchers have not reached consensus on the relationship between availability of screen devices and children's screen time. The contradictory findings show that more screen devices do not increase children's screen time. Barr-Anderson et al. (2011) reported that only the availability of a VCR/ DVD player or a video game player influenced

children's screen time in their study, and the availability of other screen devices, such as household TV or TV in children's room, did not contribute to increased screen time in children. Another study showed that more TVs at home were related to more TV time when children were older, and that the association did not occur when children were younger (Saelens et al., 2002). The number of screen devices in a child's bedroom is not related to the total sedentary time taking into consideration different types of screen devices and different types of sedentary activities (Chaput et al., 2014). However, only a small number of studies support this view, and most studies indicate that the availability of screen devices is positively correlated with children's screen time.

2.2.2 Parental Factors

In addition to the availability of screen devices, parental factors also play an important role in children's screen time (Yamada et al., 2018). Parental factors should not be underestimated in the study of reasons for children's increased screen time because modeling is an important part in early childhood when children develop rapidly and acquire skills of different kinds (Barr-Anderson et al., 2011). Carson, Stearns and Janssen (2015) studied the relationships between parents' and children's physical activities and screen time behaviors, and the results showed a positive correlation between parents' and children's behaviors. In a study based on a low-income Latino population, parental media-viewing and household media environment were reported to be closely associated with children's screen time (Asplund et al., 2015). One longitudinal study on the relationship between parents' and girls' television viewing behaviours showed that children's TV viewing correlated strongly with their parents' TV viewing behaviours and the study suggested that the family was important in modifying children's TV behaviours (Davison et al., 2005). Findings in all these studies

give insights into preventive measures to reduce children's screen time.

Children's screen time is related to parental factors which include parental screen time, parental attitudes (Lauricella et al., 2015), parental style of communicating rules on screen time (Bjelland et al., 2015), parental educational level (Lin et al., 2020; Määttä et al., 2017), etc. In their study on the relationship between TV time in early childhood and kindergarten entry readiness, Pagani et al. (2010) revealed that children having more educated mothers had less exposure to TV programs when they were 29 months old. Totland et al. (2013) studied the screen time of adolescents aged between 11 and 13 years old and reported that lower parental education (12 years or less) predicted an increase in adolescents' PC/game time of 1.4 hours a week. Barr-Anderson et al. (2011) concluded in their quantitative study that parental TV time, parental perception of children's screen time, availability of media-related resources were all related to children's screen time, and that there was a strong correlation between parental and children's screen time at home.

Although most studies show that parental factors have a significant effect on children's screen time, there are contradictory findings. Lee et al. (2009) carried out a longitudinal study on the contextual factors that might influence children's screen time and reported that there was no relationship between parental education and adolescents' TV time and that the same was true between parental education and adolescents' screen time five years later. It would be meaningful to study why the inconsistency occurs so that it would be clear whether the parental factors involved in these studies correlate with children's screen time or in what conditions parental factors influence children's screen time.

Parental screen time, one of the parental factors, is closely related to and is a predictor of children's screen time. More parental screen time is reported to be a significant predictor

of more screen time, but parental work time on computers at home has not been identified as a separate category in current studies (Goncalves et al., 2019; Totland et al., 2013). Davison et al. (2005) studied the association in TV time between parents and their daughters aged between 9 and 11 years and reported similar findings that girls with more TV time were associated with high-volume TV parents. Since researchers did not include parental screen time for work in their studies, they were not sure how much their research findings might be influenced by parental work time on computer at home. Apparently, parental screen time is a significant factor modifying children's screen time, and reducing parental screen time is believed to be effective to reduce children's screen time (Goncalves et al., 2019). However, more work is required to explore the way it functions.

Parental regulation is considered to be one of the factors functioning in children's screen time, but there are inconsistent findings of its functions. Totland et al. (2013) reported that less parental regulation was a significant predictor of more PC/game time among adolescents. Määttä et al. (2017) supported this finding, saying that family rules about screen time reduced children's screen time. However, Ramirez et al. (2011) drew different conclusions from their study in which screen devices included TV, DVD, computer, etc. Parents in this study reported that only rules for TV were associated with decreased TV time and rules for other screen devices did not show the desired decreased effects, but children reported that rules and regulations on different screen devices decreased the time they spent on corresponding screen devices. Bjelland et al. (2015) reported completely contradictory findings on the relationship between parental rules and children's screen time, that is, there was an inverse association between parental rules and screen time in pre-adolescents, and it was the style of communication of rules that mattered. An autonomy-supportive style of

communicating rules for the use of screen devices can effectively reduce children's screen time, but a controlling style can increase their screen time. The findings drawn from the study on pre-adolescents are related to the developmental features of children at this stage. The review shows that parental rules and regulations do not work in every situation, and they work with other parenting factors to function.

Parental support for physical activity is one of the familial factors that might influence children's screen time. Some studies reported that parental support for physical activity was positively related to children's physical activity and negatively related to their screen time (Pyper et al., 2016; Sallis et al., 2000), but Salmon et al. (2005) found in their study that children were less likely to be in the low-active group even if they played computer and electronic games several times per week with their parents. Similarly, although parents' physical activity was reported in many studies to strongly influence children's activity, one review of youth's physical activity showed that there was a lack of consistency between parental and children's physical activity (Sallis et al., 2000).

Furthermore, maternal education modifies children's screen time, and higher maternal education is reported to be associated with shorter screen time, but the association was not statistically significant in children's self-reported screen time (Saelens et al., 2002). The variability in the results of these studies shows that the screen time issues are more subtle and complicated than they appear. It is highly recommended that conclusions be drawn with caution on the relationship between screen time and related factors.

2.2.3 Gaps in the Literature

The home environment has a critical influence on children's behaviours (Davison & Birch, 2001), which are described as developing within an ecological niche with the home

environment playing a major role in the developmental process (Crosby et al., 2019; Davison & Birch, 2001; Salmon et al., 2005; Stokols, 1996). The literature review shows that inconsistency occurs in almost every aspect of studies concerning the reasons for increased screen time in children. Differences in study participants partly explain the inconsistency among studies, but the inconsistency has not been fully explored or revealed. It is, therefore, argued that the relationships between family environment and screen time is complex and that further studies are required to produce more reliable findings about the reasons for increased screen time and how home environment affects different forms of screen behaviours (Salmon et al., 2005).

Among the factors that might lead to children's increased screen time, parental screen time is of special importance because young children's screen time behavior is strongly influenced by their environment and their parents' behavior (Barr-Anderson et al., 2011; Goncalves et al., 2019). However, not much research has been done to reveal how children's screen time is related to their parents' or what influence parents' screen time has when new interactive media become popular in most households. Radesky and Christakis (2016) only made a prediction on the basis of studies on TV time that parent mobile device use may distract from parent-child interactions, but their study did not focus on how parent mobile device use was related to children's screen time. Salmon et al. (2005) mentioned in their study that parents' screen-based behaviours were reliable and valid factors influencing children's screen time at home, because almost all screen time for pre-school children occurs in the home environment (Tandon et al., 2011). Although it is acknowledged that parental screen time plays an important role in their children's screen time, not enough has been done to reveal what really happens during parental screen time and what children's screen time is

like.

The different types of screen devices included in this study cover the majority of the screen devices used in the households. The inclusion of these screen devices makes the findings of this study more reliable. Among the different study topics concerning screen time, other forms of screen devices apart from TV are not fully investigated (Chaput et al., 2014). Bleakley et al. (2013) only examined parental TV time reporting that parent TV viewing is a strong predictor of child TV viewing, but they did not examine other forms of screen devices that are included in this study. Researchers began to include the newly developed screen devices in their studies (Lin et al., 2020; Määttä et al., 2017), but they did not distinguish the purpose of use, which is argued to matter children's screen time (Page et al., 2010). Generally speaking, not much has been done in this aspect. Working on strong and consistent modifiable correlates of a behaviour would be more effective than working on the behaviour itself (Baranowski et al., 1998; Crosby et al., 2019). Therefore, in order to control children's increased screen time, there is a need to explore the realities of parental and children's screen time at home including different types of screen devices and different purposes of using screen devices.

Suggestions in current studies about how to deal with children's increased screen time are too simplistic and impractical, and effective suggestions should be drawn on the basis of in-depth investigation of the realities of parental and children's screen behaviours. Knowledge about the positive correlations between parents' and children's screen media behaviors (Birken et al., 2011; Carson, Stearns, & Janssen, 2015; Goncalves et al., 2019) does not provide much insight into solving children's problems, because the suggestion that parents reduce their screen time at home in order to reduce children's screen time (Xu et al.,

2015) does not seem plausible, since it is impractical to recommend parents to live a screen-free life, when screen devices have become an indispensable part of their life. Imagine a self-employed parent doing online business at home, or a professional writer working at home and taking care of a child at the same time. They will face immense difficulty with reduced screen time. An examination of what happens during parental screen time at home is more useful to identify what leads to children's increased screen time and what measures can be employed in specific situations.

There are gaps in the literature, and research is needed to examine what parental screen time is like and in what contexts parents have screen time. Based on the findings of this study, more feasible suggestions are provided to deal with children's increased screen time caused by different reasons in different situations. The current study addresses the gaps by carrying out a qualitative study in which interviews are conducted on parents' experiences of screen time with the presence of their children at home.

2.3 Theories in Studies of Health-related Behaviours

Researchers have made theoretical endeavours to explain health-related behaviours and behaviour changes (McLeroy et al., 1988; Salazar et al., 2019). Some theories and models examine the factors influencing behaviours (Conner & Norman, 2005; Salazar et al., 2019), and others explore the processes of how behaviours change. One of the influential theories is the social learning theory, which explains the processes whereby human beings acquire new behaviours. Another frequently used theory is ecological theory, which provides a multi-level framework to explain how human behaviour is influenced and modified (McLeroy et al., 1988; Owen et al., 2011). These theories are used to explain health-related behaviours in general, and can also be used to explain children's screen-based behaviours.

2.3.1 Social Cognitive Theory

Social cognitive theory was initially known as social learning theory, and is based on the principles of learning within the human social context (Bandura, 1977). It is a combination of behavioural and cognitive theories of learning, providing a comprehensive explanation of the learning process (Grusec, 1992). Social cognitive theory emphasizes the reciprocal determinism, which occurs while people interact with their environment. It posits that human behaviour is the result of the dynamic interplay of personal, behavioral, and environmental influences. Human beings are only a component of the behaviour-setting system which modifies behaviour by promoting some actions and discouraging others (Owen et al., 2011). Social cognitive theory recognizes the function that environment has on human behaviour, but it focuses on people's potential abilities to work on the environments in order to achieve their own purposes. In addition, social cognitive theory emphasizes people's ability to take collective actions, which enables individuals to work collaboratively in organizations or society to achieve environmental changes that benefit the entire group (McAlister et al., 2008).

Grusec (1992) summarized the main proposed ideas of social cognitive theory. It is argued that learning is both behavioural and cognitive, taking place in a social context. Learning is achieved by observing both a behaviour and its consequences, and the result of learning can be the performance of the observed behaviour or the denial of the observed behaviour. In the learning process, the learner, the environment and the behaviour mutually influence each other, which constitute reciprocal determinism.

Social cognitive theory is composed of five main categories of concepts, namely psychological determinants of behaviour, observational learning, environmental determinants

of behaviour, self-regulation, and moral disengagement (McAlister et al., 2008).

Psychological determinants are mainly related to outcome expectations, which refer to beliefs about how likely the targeted behaviour can bring about various outcomes. According to learning theories, people tend to maximize benefits and minimize costs. They internalize what they are learning, and their perception determines to a large extent what behaviours they finally acquire. According to McAlister et al. (2008), outcome expectations also include self-evaluative outcome expectations, which mean that people's behaviours are partly determined by their anticipation of how they will feel about themselves if they adopt the targeted behaviour. Self-evaluative outcome expectations are more important than other outcome expectations in determining behaviours, and they enable people to withstand social pressure, overcome material attraction, and make sacrifices. Another important psychological determinant is self-efficacy beliefs, meaning people's beliefs about their ability to determine the quality of functioning and the events relevant to their lives (Bandura, 1997). Self-efficacy beliefs are closely related to human behaviours concerning progressive complexity or difficulty (McAlister et al., 2008).

Observational learning is a key concept in social cognitive theory since human beings acquire most new behaviours observationally through modelling. Observational learning consists of four processes: attention, retention, motor reproduction, and motivational processes (Bandura, 1977). Among the models that are available to an individual, only those selected to be observed could exert influence on the individual, and the attentional process determines what to attend to and what to observe. Cognitive retention of an observed behaviour means that an individual needs to remember the modeled behaviour when the model is no longer available. Otherwise, the modeled behaviour has little influence when it

disappears. What has been retained in memory is converted into actions through the motor reproduction process, and skills required for the newly acquired behaviour are refined through reproductions. The motivational process finally decides what behaviour will be acquired and what will be rejected because the observed outcome of modeled behaviour will motivate people to judge whether the behaviour will be adopted or not. It is also argued that models are imitated most frequently when observers perceive the models are similar to themselves (Schunk, 1987).

Social cognitive theory emphasizes the influence of environment on human behaviours which is called the environmental determinant of behaviours. New behaviour could be acquired through observational learning only when there is positive expectant outcome in the individual's environment (Bandura, 2001; McAlister et al., 2008). This process can be realized through two ways, either providing rewards or punishments for desired or undesired behaviours or providing necessary conditions to make the new behaviour easier to perform.

Self-regulation refers to people's capacity to accept temporary negative outcomes of a new behaviour which brings about long-term positive outcomes (Bandura, 1977). Self-regulation can be achieved in different ways, such as self-monitoring, goal-setting, feedback, self-reward, self-instruction, and enlistment of social support (McAlister et al., 2008).

Moral disengagement refers to the violation of moral standards which enable them to behave morally appropriately in society. People can violate moral standards in different ways, such as using less offensive euphemistic terms, displacing responsibility to authority, etc. (Bandura, 1999).

Social cognitive theory has been applied to deal with health-related issues like childhood obesity (Golan & Weizman, 2001). The theory was recommended in Golan and

Weizman's (2001) study because the treatment of childhood obesity became more effective when parental and household factors were involved in the process. When surrounded by family members with healthy eating habits, the obese children lost more weight than those who changed their own eating habits to control their body weight while the other family members kept their previous eating habits (Golan et al., 1998). The findings show that the family-based weight-control approach based on observational learning theory is more effective than the traditional approach aiming at changes only in the obese children.

Social cognitive theory has both strengths and limitations. It outlines a comprehensive conceptual framework to explain what influences human behaviour and how learning occurs, giving insight into health-related issues. It has been adopted to design interventions in medicine and public health. Despite its ability to provide explanations for human behaviours, it has not been fully tested. Although some concepts in the framework of social cognitive theory have been investigated thoroughly, such as self-efficacy, moral disengagement, etc. (McAlister et al., 2008), that does not mean that the whole theoretical framework has been tested thoroughly.

2.3.2 Ecological Theory

Ecological theory has been employed in recent years in research and practice related to health problems. The concept of ecology comes from biological science and refers to the interrelations between organisms and their environment (Sallis et al., 2008). It has developed diagrams in different social disciplines to explain people's interaction with the physical and sociocultural environment, and the diagrams are frequently used in the field of behavioral sciences and public health (Stokols, 1992). Ecological theory of human development developed by Bronfenbrenner (1979) reveals the relationship between people's direct and

indirect environments, their social interaction, and their development.

Ecological theory emphasizes that the environment or the context is important in understanding the emergence of a particular characteristic (Davison & Birch, 2001) and that appropriate changes in the environment can lead to changes in individuals (McLeroy et al., 1988). All changes or development are realized in a certain context or environment where the person is located (Bronfenbrenner, 1986; Crosby et al., 2019). Ecological theory provides ecological models where multiple and interacting determinants of behaviours are considered to function on different levels in a system, and the theory can figure out changes and help to develop intervention approaches (Davison & Birch, 2001). Simply put, behaviours can be affected by multiple levels of influences, among which there are bi-directional relationships, within an ecological model, and ecological models are believed to have the potential to guide approaches to changing behaviours that will reduce serious and prevalent problems (McAlister et al., 2008).

The core concept of ecological theory is that behaviour has multiple levels of influences, and scholars have developed their own systems with different terms. Brofenbrenner identified micro-, meso-, exo-, and macrosystem levels of influences, McLeroy and colleagues figured out influences coming from intrapersonal, interpersonal, institutional, community and policy sources (McLeroy et al., 1988), and Sallis et al. (2008) identified influences on intrapersonal (biological, psychological), interpersonal (social, cultural), organizational, community, physical environmental, and policy levels. No matter what terms are used, they mark the multiple levels of influences which function interactively to shape behaviour.

In this study, an ecological model consists of influences at intrapersonal, interpersonal,

organizational, community, and policy levels (Sallis et al., 2008), because the terms themselves explicitly express their meanings. At the intrapersonal level, influences on behaviours come from a person's knowledge, attitudes, beliefs, motivation, self-concept, past experience, and skills (Butterfoss et al., 2008). Influences at the interpersonal level reflect how people interact and influence each other in modifying the targeted behaviour; at the organizational level, how people communicate with each other influences behaviour, such as how effectively health-related services are delivered (Finnegan & Viswanath, 2008). Community can be used to mean a functional spatial unit, and it can also be used to mean a unit with shared interests or characteristics such as a unit of patterned social interaction, symbolic unit of collective identity, or social unit to achieve political goals (Minkler et al., 2008). Policy change influences people's behaviours by providing a broader social environment for people's behaviours and by delineating what is socially allowed and what is not.

In order to analyze behaviours and work on interventions to change behaviours to avoid problems, researchers put forward four core principles of ecological models of behaviours (Crosby et al., 2019; Sallis et al., 2008).

- Behaviours are affected by multiple influences including factors at the intrapersonal, interpersonal, organizational, community, and public policy levels.
- Influences on behaviours interact across different levels.
- Each behaviour has a specific ecological model which contains influences at different levels, and the ecological model is behaviour-specific instead of being applicable to different behaviours.

- Interventions taking into consideration influences at multi-levels should be most effective in changing behaviour compared with other interventions.

The first principle states that behaviours are affected by factors at different levels, namely intrapersonal, interpersonal, organizational, community, and public policy. Ecological models include all these different levels instead of consisting of only one or a few of them. The second principle states that influences interact across levels, and it means that factors at different levels work together to modify behaviour. Changes in one influence at a certain level might affect the effectiveness of influences at other levels. Thirdly, ecological models are behaviour-specific, so it is important to identify the influences specific for a behaviour in order for the ecological models to exercise maximum effect. The last principle argues that multi-level interventions should be most effective in changing behaviour. Since influences on behaviour occur at different levels, interventions in changing behaviour should also be multi-level. Interventions at a single level are unlikely to overcome the effect of influences at other levels and bring about changes in behaviour. Interventions at a single level are unlikely to have sustained effects even if they work.

An important strength of ecological theory is its focus on multiple levels of influences, which provides more options for interventions, expanding the influences from individual to environmental factors. The environmental and policy contexts of behaviour are emphasized in ecological models and intervention can maximize behaviour changes when environments and policies support behaviour changes, social norms and support are strong, and individuals are motivated to make the targeted choices (Sallis et al., 2008). In addition to interventions functioning at the individual level, policy and environmental changes can virtually affect the entire population and establish environment which supports behaviour changes. Researchers

in the field of physical activity have recognized the importance of environmental influences in changing physical activity, and they have also developed and tested multi-level ecological models on specific behaviours (Giles-Corti et al., 2005).

Ecological theory has been applied to health-related issues, such as understanding influences on health behaviours and interventions for health behaviour changes. It is assumed that the healthfulness of a situation and the well-being of the participants are influenced by multiple factors in both the physical and social environment (Stokols, 1992). Individual and environmental factors function cooperatively and interactively to determine an individual's behaviours, and health-related behaviours can be modified through changes in individual and environmental factors. Ecological theory has been central to health promotion for decades, and has been useful in solving the most pressing health problems using the multi-level interventions.

Ecological models have weaknesses despite the strengths. Since ecological model is behaviour-specific, it is impossible to identify the most important influence that fits different ecological models. It is required to identify critical factors in each case in order to exercise the influences of the ecological model in behaviour change situations. Another weakness is that it is not clear how influences work at the different levels and how they interact across different levels within the ecological model. Ecological models broaden people's perspectives to deal with influences from multiple levels, but they rely to a large extent on researchers' abilities to identify factors that work in ecological models and in the interventions on health behaviours.

2.3.3 Summary

Social cognitive theory and ecological theory make use of different systems to explain

human behaviour and behaviour changes. Environmental determinants of behaviour make social cognitive theory similar to ecological theory in the way that they both emphasize the importance of environment in shaping human behaviour. However, they are different systems in explaining behaviours. Social cognitive theory provides a detailed explanation of the processes of a behaviour and ecological theory describes how influences at different levels function together to modify behaviour.

The two theories are complementary in explaining human behaviours and interventions in behaviours. Human beings acquire new behaviours observationally through modelling, and determinants at different levels of an ecological model for the behaviour function cooperatively in the learning process to modify the final behaviour acquired by the individual. The self-evaluative outcome expectation and self-efficacy beliefs at the intrapersonal level motivate the individual to start a behaviour. The individual then observes the model to learn the targeted behaviour through attention, retention, motor reproduction, and motivational processes. The behaviour is further modified by environmental determinants at the intrapersonal, interpersonal, organizational, community, or policy levels, so that it is finally determined whether the targeted behaviour is acquired or rejected.

The literature review of children's screen time shows that only a very small number of studies provide theoretical explanations for the issues under study. Most of the recent studies with theoretical foundations are based on ecological theory claiming that behaviour settings contribute substantially to the type and magnitude of behaviour, so they explore home environment factors such as TV access and their relation to children's overall TV watching (Crosby et al., 2019; Saelens et al., 2002; Saquib, 2018). Other theories have rarely been used to explain screen behaviour, and other factors that might function in people's screen

time have not been explored in the theoretically-based studies.

Of the studies employing ecological models to explore children's screen time, none has examined the factor of parental screen time, which is defined in this study as the time parents spend on different screen devices for different purposes. Carson and Janssen (2012) examined the relationship between factors within the home environment and screen time in their quantitative research, and reported that the independent variables was composed of intrapersonal factors (such as gender and date of birth), interpersonal factors (family demographic information, self-efficacy of parents to reduce or eliminate children's screen time, parental attitudes toward children's screen behaviours, barriers to reduce children's screen time, descriptive norms for children's screen time, parent's screen time), and physical environment (screen devices in children's bedroom). All the independent variables except children's gender and the physical environment were correlated with screen time. Parental attitudes toward children's screen behaviours, descriptive norms for children's screen time and barriers to reduce children's screen time were most relevant to children's screen time. Parental education, income and self-efficacy were negatively correlated with children's screen time, and the other independent factors were positively correlated with children's screen time. Although parent's screen time was included in Carson and Janssen's (2012) study, it was limited to parent's screen time for entertainment, but not for work or school. The fact is that screen time for work or school has become an important part in many households especially during the pandemic, so there is an urgent need to explore what parental screen time is and how it is in the home environment.

The gaps in literature and in the application of theories to children's screen time gave rise to the current study. Addressing the research gaps on the real situation of parental screen

time at home, the current study defines parental screen time at home to be the time parents spend on different screen devices for different purposes. To address the lack of theoretical support for studies of children's screen time, the current study combines social cognitive theory and ecological theory to provide reasonable explanations for children's increased screen time and potential interventions that could reduce children's screen time and minimize its negative side effects.

Chapter 3: Methodology and Methods

School age children are most likely influenced by their parents and other caregivers (Carson, Stearns, & Janssen, 2015), and their screen time behaviour is likely to remain stable and last into adolescence and even adulthood (Zhao et al., 2018). It is worth exploring what screen time is like in the home environment. What is parental screen time at home? How is it? How is parental screen time connected with children's? Does parental screen time at home shape children's screen time in any way? This study aims to get detailed information on parental screen time at home with the presence of their Y1 children at home and it is a qualitative study in nature.

This study is underpinned by relativist ontology, holding that reality is subjective and contextual, and that social reality is humanly constructed and multifaceted (Sparkes & Smith, 2014). This study is also underpinned by subjectivist and constructionist epistemology, claiming that knowledge is subjective and the findings are the creation of interaction between the researcher and the researched (Sparkes & Smith, 2014). It is intended to explore parents' experiences of their own screen time while their Y1 children are at home. Details are provided on what and how parental screen time is like at home. Analysis shows what children do when parents are engaged in different screen-based activities, and the co-occurrence of parental and children's screen time indicates how children's screen time might be related to their parents'.

This study is about parents' real-world experiences of their screen time, and a phenomenological approach is adopted (Carter & Little, 2007). According to Moran (2000), phenomenology means to describe phenomena as whatever appears in the manner in which it appears, and seeks to describe the common meaning of the lived experience for the

individuals (Creswell & Poth, 2018). The phenomenological framework implies that a small number of subjects will be studied through extensive engagement to develop patterns of meaning; the researcher tries to build the essence of experience from participants (Creswell, 2003; Creswell & Poth, 2018) and capture their lived experience (Brinkmann, 2013). The current study is based on parents' real-world experiences of their use of screen devices at home with the presence of their children, and patterns of their screen behaviours emerge from participants' accounts. The sample size of this study is thus small because of its phenomenological nature.

This study aims to gain insights into the relationships between parental and their children's screen time. A phenomenological approach is used, and the data are collected in semi-structured interviews with 8 parents of Y1 children. The analysis model adopted in this study is based on the one put forward by Creswell and Poth (2018), which is a modification of the Stevick-Colaizzi-Keen method modified by Moustakas (1994). Significant statements were identified from the data, and grouped together to develop themes, which were used to create descriptions of parental screen time at home and how parents experience screen time at home.

3.1 Phenomenology

Phenomenology originated from Edmund Husserl as an independent science of the essential structures of pure consciousness with its own distinctive method (Moran, 2000). Edmund Husserl focused on the philosophical aspect of phenomenology, and other scholars applied this research method to different fields of study like sociology (Ferguson, 2006), psychology (Spinelli, 2005), health sciences (Chan et al., 2010), and education (van Manen, 2014).

A phenomenological study describes the common meanings of people's lived experience of a phenomenon (Creswell & Poth, 2018), outlining what all participants experience in common and the essence of a phenomenon. The most important questions in phenomenological studies are "what gives itself and how something gives itself" (van Manen, 2014). The researcher collects data from people with experience of the phenomenon under investigation and gets a composite description outlining the essence of participants' experience of the phenomenon. The final composite description is composed of what participants experience and how they experience the phenomenon (Moustakas, 1994).

Scholars have identified two approaches to phenomenological studies: hermeneutic phenomenology and psychological phenomenology (Creswell & Poth, 2018). "Hermeneutic phenomenology is a method of abstemious reflection on the basic structures of the lived experience of human existence" (van Manen, 2014, p. 26). By abstemious is meant that a phenomenological study aims at the essential structure of the lived experience. Hermeneutic shows that the analysis in phenomenological studies involves researcher's interpretation of the meaning of lived experience. Hermeneutical phenomenology is actually interpretive-descriptive phenomenology. Moustakas's approach is called psychological phenomenology, which emphasizes a description of participants' experiences rather than the researcher's interpretation of participant's lived experience (Moustakas, 1994). In order to realize this goal, the researcher should set aside his/her own experience of the phenomenon being explored and bracket his/her views before data analysis. The essence is the development of participants' descriptions, and no subjective explanations or analyses should be added to the essence of participants' lived experience (Moustakas, 1994). Researcher's judgements should be suspended in a phenomenological study. Although the two approaches hold different

opinions on the role of researcher's interpretation in phenomenological studies, they both aim at the essence of lived experience and psychological phenomenologists also admit that researchers seldom perfectly bracket their own views in phenomenological studies (Moustakas, 1994). The current study adopts the psychological approach to phenomenology, claiming that the researcher suspends her judgements by bracketing her views on the phenomenon and sticks to the participants' descriptions of their lived experiences, although the researcher cannot absolutely bracket her views.

Creswell and Poth (2018) summarized the defining features of phenomenology:

1) A phenomenon to be explored and phrased in a concept or idea.
2) The study of the phenomenon based on participants having experience of the phenomenon.
3) A philosophical discussion of the fundamental ideas in a phenomenological study.
4) Bracketing the researcher by a discussion of the researcher's experience of the phenomenon.
5) Collecting data typically through interviews with individuals having experience with the phenomenon.
6) Data analysis starting from the narrow units, moving on to broader units, and ending up in a composite description of what the participants experience and how they experience it.
7) The ending of a phenomenological study with a descriptive passage of the essence of participants' experience of the phenomenon.

Figure 3.1

Procedures for Conducting Phenomenological Research **(Creswell & Poth, 2018)**

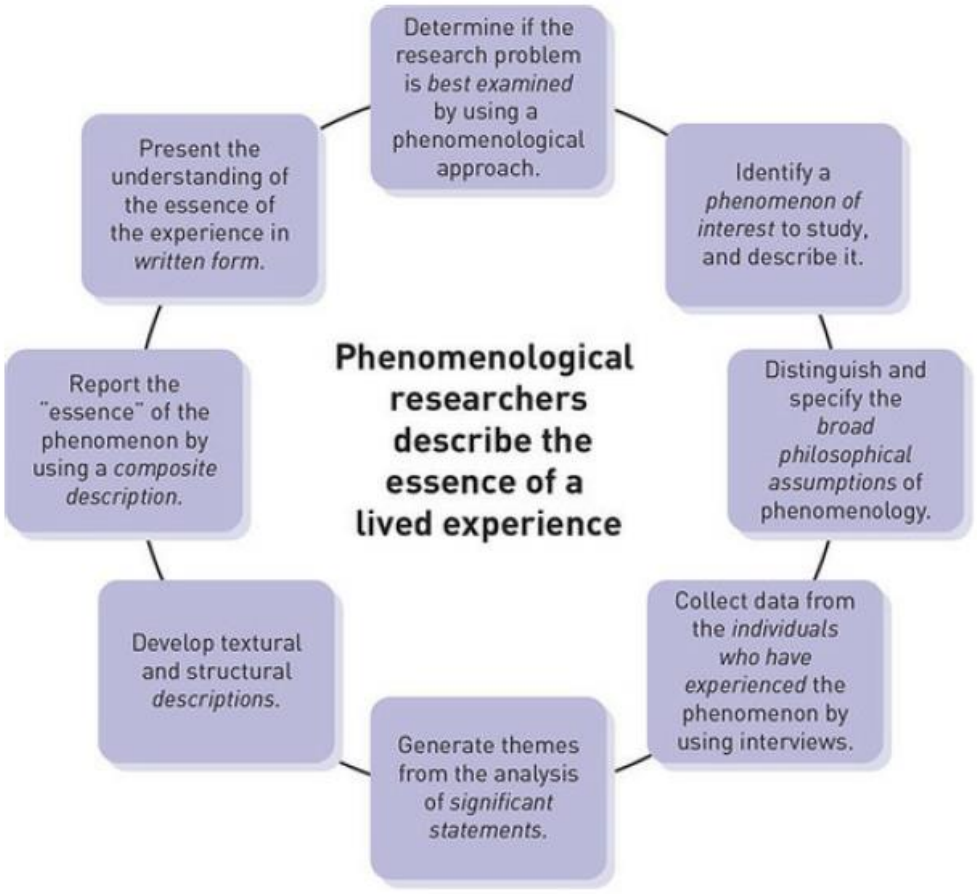


Figure 3.1 illustrates the systematic steps to guide data analysis and the composition of textual and structural descriptions. a) The research starts from a determination that the phenomenological approach is the best to examine the research question. It is important in phenomenological studies to understand the essence of a phenomenon through what is common in several individuals' lived experience. b) Once the determination is made, the researcher needs to identify the phenomenon to be studied and to describe the phenomenon. c) To distinguish and specify the broad philosophical assumption of phenomenology, the researcher needs to bracket out his/her own views on the phenomenon as much as possible,

distinguishing between his/her personal experience and the objective reality drawn from participants' experiences. d) In the data collection process, data are collected from individuals who have experienced the phenomenon through interviews. The two guiding questions in the interviews are: what is your experience of the phenomenon? In what contexts or situations do you usually experience the phenomenon? e) In the data analysis process, the researcher identifies significant statements, which are expressions of how the participants experience the phenomenon, and generates themes or broader meaning units from the significant statements. f) Textual and structural descriptions are developed with the use of significant statements and themes that have been identified and generated in data analysis. Textual descriptions are about what participants experience in terms of the phenomenon, and structural descriptions provide information about the contexts in which the participants experience the phenomenon. g) A composite description is used to report the essence of the phenomenon, describing the common experiences of all participants. h) The final written presentation of the phenomenological research is completed to report the essence of the phenomenon.

3.2 Participants

The participants in this study were parents of Y1 students, and they were recruited through a volunteer recruitment advertisement posted on the social media of Facebook and WeChat. The participants were mainly the contacts of the researcher, people in the same discussion groups as the researcher, and other individuals who had connections with the previous two groups of people.

The first year of schooling was selected to be the period under study because early childhood is a critical period when parents can take effective preventive measures to

guarantee the development and maintenance of healthy behaviours (Twarog et al., 2015). Behaviours of Y1 children are most likely influenced by parents and other caregivers (Carson, Stearns, & Janssen, 2015; Olstad & McCargar, 2009) instead of by their peers in schools and other factors. Susceptibility to peer pressure begins to increase in early adolescence, and peer influence is not obvious in Y1 students (Steinberg & Monahan, 2007) and can be overlooked when studying the potential factors that influence children's screen time. Therefore, the stage of Y1 was chosen for this study.

3.2.1 Sampling Method

Purposeful sampling was employed in this study. By adopting purposeful sampling, the researcher intended to identify and choose the most effective participants, who were information rich, expressive and could communicate their experiences in a reflective manner (Palinkas et al., 2015; Patton, 2002). Purposeful sampling tried to achieve the most effective results and ensured the efficiency of this study by producing fruitful results.

3.2.2 Recruitment

Ethics approval was obtained from the Behavioural Research Ethics Board of The University of British Columbia at the very beginning of this study.

In the sample recruitment process, the researcher posted a volunteer recruitment advertisement on the social media of Facebook and WeChat to recruit participants for this study. The recruitment advertisement was posted on the researcher's personal page on Facebook and WeChat, and in the group of UBC Families on Facebook. The contacts in the social media and the discussion group members who saw the advertisement post were mainly the researcher's acquaintances and members in the same discussion group as the researcher. People who saw the advertisement post were welcome to spread the information by

forwarding the advertisement. Among the respondents who were interested in this study, eight individuals were purposefully sampled with the intention to recruit information rich individuals who could, at the same time, communicate their experience in an effective way. This way of participant recruitment ensured that all the participants were interested in the research topic, willing to share their ideas and experiences on their uses of screen devices at home, and could effectively convey their meanings so that rich information was collected through interviews. Among the eight participants, three were the researcher's classmates, three were the researcher's neighbours living in UBC communities, and two contacted the researcher to participate in the study after they saw the recruitment advertisement shared by a contact of the researcher. The eight participants were located in different countries.

The number of participants recruited for the interviews were 8. The sample size for this study was small, since it was intended to get an in-depth understanding of parents' experiences of screen time at home, and this was an emergent and inductive process instead of making generalizations in a large population or relying on hypothesis testing (Marshall, 1996). Many researchers (e.g., Blaise, 2010) also argue that small scale studies are not less important investigations, but that they are just different. It is accepted that the adequate sample size for interviews in phenomenological studies can vary from 3 to 4 individuals to 10 to 15 (Creswell & Poth, 2018) or from 5 to 50 (Dworkin, 2012; Ritchie et al., 2003). The 8 participants in this study meet the requirement on sample size for interviews in phenomenological research.

3.3 Data Collection

The data collection method used in this study was interviewing, which provided in-depth information on the research topic and was usually used to explore the views,

experiences, beliefs, etc. of individuals on specific matters (Crouch & McKenzie, 2006). Interviews are appropriate in cases in which little is known about the phenomenon under investigation or where insights are required from the participants (Gill et al., 2008). This study intended to get an in-depth understanding of parental screen time at home with the presence of their Y1 children and to generate data with authentic insights into people's experience to answer the research questions. Although some studies have shown that more parental TV time co-exists with more TV time in children and there is a positive correlation between parents' and children's TV time (Carson & Janssen, 2012), which is one type of screen time studied in this research, little is known about what and how parental screen time is when they use other screen devices than TV. In addition, little is known whether screen time with different purposes should be identified and discriminated when dealing with issues related to children's increased screen time. Therefore, interviews were used to collect data with insights in these aspects.

The interviews were semi-structured, consisting of several guiding questions to define the area to be explored and allowing the interviewer and interviewee to diverge in order to pursue an idea or response in more detail, so that the interviewer and the interviewee had the flexibility to go deeper into information that was important to participants but had not been anticipated by the researcher yet (Gill et al., 2008). Open-ended interview questions were used to elicit the participants' descriptions of their experiences with screen devices at home and the contexts in which they had screen time.

One interview was conducted in person, seven were conducted online, and all the eight interviews were conducted during the COVID-19 pandemic. Seven interviews were conducted online because four participants lived in different countries than the researcher,

and social distanced lifestyle was recommended during the pandemic. Therefore, seven out of eight interviews were conducted online.

The data collection was roughly conducted in the following steps. Ethics approval was obtained from UBC Behavioural Research Ethics Board. Participants in this study were recruited through the researcher's post of volunteer recruitment advertisement in social media. Eight participants were recruited through purposeful sampling. Once recruited as the participants, each of them was sent the Participant Consent Form by email providing contact information of the researchers, a more detailed introduction of the study, information about the potential risks and benefits of the study, confidentiality, rights of the participants, etc. Each participant had an interview with the researcher and the time and place for the interview were of the participant's choosing, which ensured that the participants were comfortable with the interviews. The interval between the time when interviewees received the Participant Consent Form through email and the interview was at least one week, so that participants had enough time to ask questions concerning the study and their participation in the study and to consider whether they would participate in the study. Before each interview began, the purpose of the study was explained to the participant again, emphasizing the confidentiality of the data collected through the interview, and making it clear that the participant was free to withdraw from the interview and the study at any time without giving a reason. Then the consent form was signed by the participant and an extra copy of the consent form was given to the participant for reference. According to the requirements for interviews conducted after the lockdown during the COVID-19, online interaction only was used and virtual interviews were adopted to replace in-person interviews. The participants signed the Participant Consent Form before the interview, took photos of it, and then sent it

back to the interviewer. Each interview lasted for about an hour, during which the participant shared their screen time experience with the interviewer.

Interview questions were prepared prior to the interviews to guide the interaction between the interviewer and interviewee, and were asked during the interview interactions after the introduction and building rapport with the interviewee. According to the phenomenological nature of this study, research questions are mainly around the central elements:

a) What have you experienced in terms of screen time at home with the presence of your Y1 child?

b) How is your experience? What contexts or situations are there when you have screen time?

In the interviews, the participants were invited to share their experience related to the guiding questions listed above, and they also talked about issues related to parental and children's screen time at home, parental and children's other activities in the home environment, and relevant factors other than the ones mentioned above. The interviews were audio-recorded and transcribed verbatim afterwards using the transcription software Express Scribe. Member reflections were done in this study. The transcription and a summary were sent to each participant for questions, comments and critiques. The final research findings were also provided for the participants, so that they were informed of the findings regarding parental screen time at home and the relationship between parental and children's screen time.

3.4 Data Analysis

The processes of data collection, data analysis, and the writing of the study results were actually interrelated in this study. During the process of data analysis, the interview

transcriptions were read repeatedly to form a general understanding of each participant's screen time experiences, and then to do the detailed analysis. Data analysis in this study followed systematic procedures, identifying significant statements from data, developing meaning units or themes, and then creating detailed descriptions of the essence of parental screen time at home with the presence of their Y1 children (Creswell & Poth, 2018; Moustakas, 1994). The analysis was carried out in the following steps (Creswell & Poth, 2018; Moustakas, 1994):

a) Bracketing out the researcher's personal experience. A description of the researcher's screen time experience was provided to set aside the researcher's personal experience, so that the study can focus on the participants' experiences.

b) Listing significant statements. Statements of participants' screen time experiences at home were identified as significant statements. A list of significant statements was created with non-repetitive, non-overlapping statements, and a file in NVivo was created for the list of significant statements in each interview.

c) Thematizing significant statements. Significant statements were grouped into larger units, called themes, which were the core of the experience.

d) Textural descriptions of parental screen time at home. The significant statements and themes were finally integrated to form exhaustive descriptions of what the participants experienced, the textural descriptions, and verbatim examples were provided.

e) Structural descriptions of parental screen time at home. The structural descriptions focused on the settings and contexts in which participants experienced their screen time at home.

f) Composite description of screen time at home. The textural and the structural descriptions were synthesized to form a composite description of the phenomenon. It was the essence of participants' screen time at home.

The results of the study were presented descriptively and the discussion of the findings was grouped around the themes that were identified in the data analysis. Because parental screen time was discussed in specific contexts, great details were required in the discussion of potential connections between parental and children's screen time at home. When parents were engaged in screen time, children's activities were analyzed, and this showed whether children's screen time was related to parental screen time. Similarly, when children had screen time, parental activities were discussed, and the discussion revealed some of the reasons for children's screen time. During the analysis, abundant details were provided to explore the potential connections between parental and children's screen time.

3.5 Procedures to Ensure Research Quality

Quality of this study has been considered throughout the research process. The criteria of qualitative research quality (Tracy, 2010) were achieved through different skills.

A worthy topic was selected for this study. Screen time has been a topic for both researchers and practitioners in the field of early childhood education (Sigman, 2012). It has effects on children's well-being in early childhood and also affects the adult lifestyle. Screen time issues became prominent because of the pandemic when people worked or studied at home especially during the lockdown periods. All the factors make the research topic a worthy topic.

Sincerity of this study was achieved through reflexivity and transparency. The researcher was honest about subjectivity and admitted that reality was subjective and the

findings were the creations between the researcher and researched. The researcher provided a statement of her personal screen time experience with the presence of children at home, and tried to bracket out her personal views while accepting that it was impossible to be absolutely objective in this study. The researcher kept reflexive notes on the coding of the data so that all the data were coded systematically in NVivo 12 software. In addition, honesty about the research process ensured transparency. The data collection and data analysis processes were explained in detail in this study.

Credibility of this study was achieved through rich descriptions and member reflections. Credibility means trustworthiness, verisimilitude, and plausibility of the research findings (Tracy, 2010). Credible studies give readers a sense of trustworthiness to act on. Thick description was provided to achieve credibility in this qualitative study (Bochner, 2000). Significant statements were identified from interview transcriptions, themes were developed in data analysis, and the significant statements and themes were used to compose textural and structural descriptions of participants' experience of screen time when their children were at home. In addition to thick description, member reflections were done to ensure the credibility of this study. The interview transcription and a summary were sent to each participant for questions, comments and critiques, and the final research findings were also sent to the participants via email, so that the participants were informed of the findings of this study.

This study has significant contribution to research and practice in early childhood education, and has meaningful coherence. This study extended knowledge on parental screen time and its relationship with children's screen time at home. It also has the potential to inform practice in dealing with children's screen time. Appropriate research methods were

employed to answer the stated research questions, and the research findings were discusses in relation to the literature to achieve meaningful coherence in this study.

Chapter 4: Textural and Structural Descriptions of Participants

4.1 Bracketing Out Researcher's Views

The researcher of this study, parent of two toddlers, 2 and 4 years of age, has at most 4 hours of screen time at home every day, mostly while the kids are sleeping. The researcher uses her laptop to study and deal with other activities such as reading and sending emails, searching for information on the internet, shopping online, etc.

During the pandemic period, the researcher and her husband took care of the kids at home, and childcare, cooking, and other household chores took up most of the daytime, so the researcher had most of her screen time after the kids fell asleep. The morning time after breakfast and cleanup was story time for children, who were eager to read story books with parent(s) because neither of them could read now. Both of them wanted the parent to read their choice of the story books, so they struggled to learn to take turns. When they could not wait for their turn, both parents were involved in the story time. The morning was also a drawing time, when the kids coloured with crayons, drew pictures, painted with brushes, or simply drew lines, circles, etc. Sometimes, the elder kid read books in which there were activities involving numbers and letter, and she asked to do the activities. In this case, some time was spent on learning numbers, letters, counting, or spelling, but it did not happen regularly. Besides, there were other options for morning time, such as free play, 15-minute sports, craft, snack, or getting involved in cooking or baking, etc. Lunchtime was usually followed by a short quiet period of 15-40 minutes when the kids calmed down and played on their own or just lay down to rest for a while, but they no longer took daytime naps. After that, the kids had 1 to 2 hours of outdoor activity in the afternoon. When Daddy could bring the two kids out alone, the researcher had around 1 hour of screen time. The kids played

freely after they came back from their outdoor activities and before supper, and one parent monitored them during their play for safety reasons. The elder child had one hour of screen time after supper, watching cartoons or song episodes. The younger one also watched with her sister, but she usually lost interest after 15 or 20 minutes and came to one parent with a book or a toy. The last step of bedtime routine was story reading, and each child chose one story book and targeted one parent to read it. Only after the children fell asleep between 8 p.m. and 9 p.m. did the researcher have screen time for about 3 hours.

In the researcher's family, parents were busy meeting children's essential needs, accompanying them during plays and monitoring them for safety reasons, showing them how to play with the other sibling, involving them in cooking and baking, and doing the household chores. These activities took up most of the daytime when the children were active, and parents did have little screen time during daytime.

4.2 Introduction

In the current study, data were collected from parents of children in the first year of schooling, which was kindergarten in some countries or regions and grade 1 in other countries or regions. Some participants were doing a degree in school and some working. The basic information of the participants is provided in Table 4.1. Participant 1 and Participant 8 did not hold a job at the time of interview, and they were taking care of the family full-time. Participants' levels of education were described by the number of years of formal education they had received. 12 years of education means that the participant had high school graduation, and 12+ years of education means that the participant had received post-secondary education. The languages participants spoke at home refers to the languages participants used to communicate with their children and other family members, and they

were not necessarily the languages they used in the interviews. All the participants were in their thirties at the time of the interviews, and the age information was not listed in Table 4.1.

Table 4.1

Demographic Information about Participants

	Gender	Occupation	Level of Education (years)	Number of Children in the Household	Languages at Home	Citizenship
P1	Female	N/V	12+	3	French	French
P2	Female	Student	12+	2	Chinese & English	Canadian
P3	Male	Business owner	12	3	Chinese	Chinese
P4	Female	Business owner	12+	1	Chinese	Chinese
P5	Female	Government employee	12+	2	Chinese	Chinese
P6	Female	Secondary school teacher	12+	1	Chinese	Chinese
P7	Female	Student	12+	1	English & Punjabi	Indian
P8	Female	N/V	12+	2	English & Chinese	Canadian

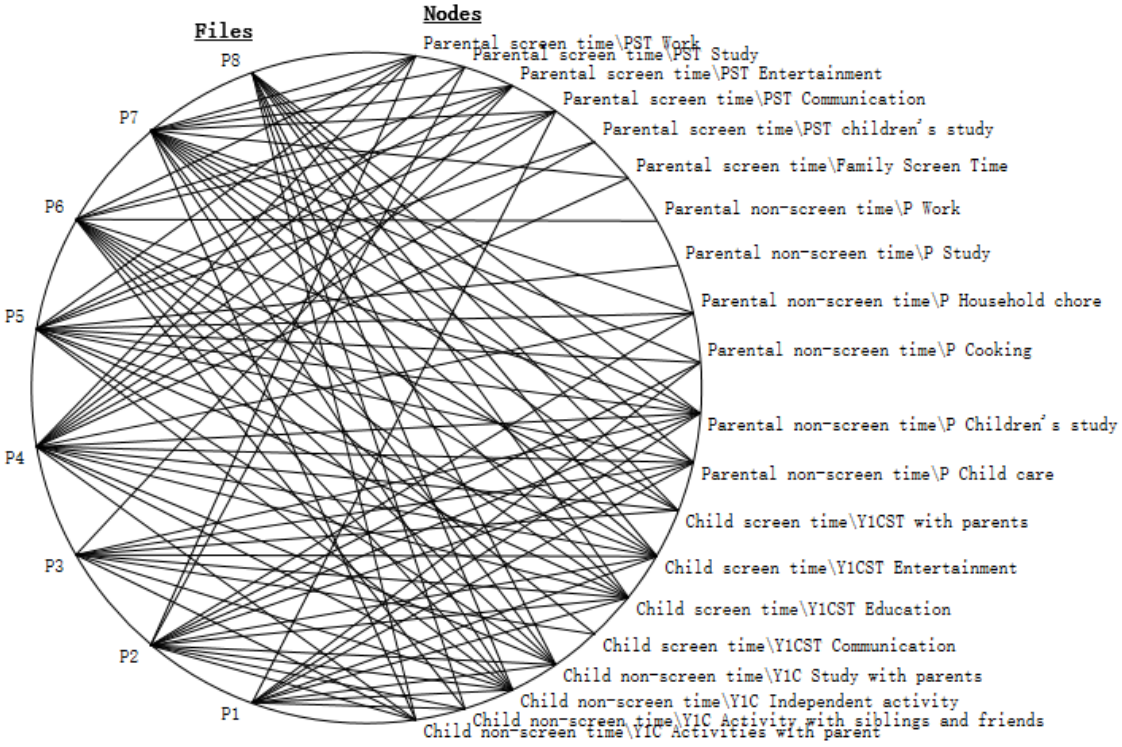
Data analysis showed that parents used screen devices for different purposes when their Y1 children were active at home. Some used screen devices to work, some to study, some to communicate with others, and still some used screen devices for entertainment. Y1 children were involved in different activities, either screen-based or non-screen-based, while their parents had screen time. Similarly, Y1 children had screen time for different purposes at home and their parents were engaged in different activities at that time. An overview of the participants' and their Y1 children's activities at home is provided in Figure 4.1.

Figure 4.1 shows parents' and children's different types of activities at home, including screen-based and non-screen-based activities. It can be seen that during the time when both the participants and the Y1 children were at home, some participants had no screen time at all but were occupied with other non-screen-based activities, and all of them

experienced children's screen time both for study and for entertainment.

Figure 4.1

An Overview of Parents' and Children's Activities at Home

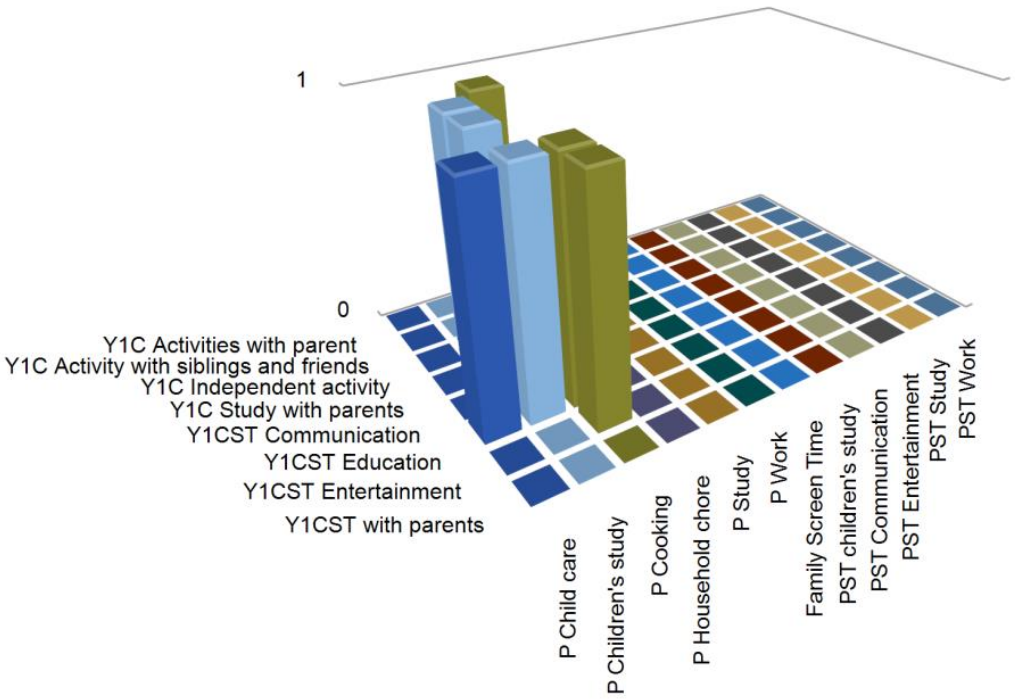


4.3 Participant 1

Participant 1 (P1) was the mother of three children. The second child (Y1C1) in the family was in the first year of schooling, the eldest one in the fourth year of elementary school, and the youngest one in daycare. The father of the children worked full-time, and P1 mainly took care of the family at the time of the interview, but she had held a job before the third child was born. P1's father, who was healthy, lived with the family, but he was not a caregiver for the children. P1's and Y1C1's activities were shown in Figure 4.2 when they were at home.

Figure 4.2

P1's and Y1C1's Activities at Home



The family had a lot of outdoor activities after the children finished school during normal school days, and Y1C1 played and ran in the park for almost two hours "to exhaust his energy." During the pandemic, school turned online, and people stayed at home except for essential reasons. Figure 4.2 reveals that P1's time was filled with non-screen-based activities when Y1C1 was at home. P1 described her days as "being busy cooking for 6 people", and "having no spare time at all". At the same time, she took care of the 3 children, helping them with their online classes, and trying to avoid quarrels or even fights between them. P1 had screen time to communicate with others, but she usually "took a quick look at what it was when my cellphone rang, and it often occurred that "I forgot to make a reply until several days later." Figure 4.2 does not show P1's screen time for communication because P1 only had very limited time for it when Y1C1 was at home.

4.3.1 Textural Description

There were smartphones and laptops in P1's family. P1's screen time experience at home when her children were at home was mostly for the purpose of unavoidable communication. P1 usually answered phone calls when the phone rang or picked it up to check incoming messages when there were notices. Her screen time for communication happened in such a short time that she continued with her previous activities almost without interruption. She also used screen devices to "chat with overseas friends or communicate with contacts when we could not meet in-person." However, this happened at a very low frequency, and P1 did not even describe details in this aspect. The family used to have TV access, but they no longer used it because "we do not have the time for it, nor do we want to watch TV programs." Generally speaking, P1 did not have much screen time when her children were at home.

When the children were at home, P1's time was filled with childcare, children's activities without screen devices, cooking, and household chores. Before the lockdown in the pandemic, children went to school every day, and "I started cooking immediately when we got home in the evening." Children stayed at home during the lockdown, and school turned online. "I need to keep an eye on how their online classes go while cooking. Do the systems work? Does any of them run away from his/her class? Is there a quarrel or fight?" P1 was also involved in activities with children. "We read a lot. Y1C1 could read a little bit, but could not read all by himself yet, so he sometimes asks us to read books for him. The youngest one always asks us to read for her."

P1 had a large amount of time for outdoor activities with the children. "We seldom

stay at home." "We do not go home after school. We play in the park just beside their school, so that Y1C1 could exhaust his energy." "We walk back home after about 2 hours of playing in the park."

The children had screen time at home, and it was the last choice for P1. The children sometimes played by themselves at home. "When we arrive home from the park after school, they're often busy with roleplays while I'm busy cooking." However, parental supervision was required during their play. "They sometimes quarrel." If P1 could not spare time and attention to the children, she gave them screen time to keep them safe and in order. "I would allow them to watch cartoons using the laptop when I have food cooked on stovetops and have no time to mediate for them." During the pandemic lockdown, P1 and her husband were more tolerant of children's screen time. "Everyone can use the smartphones for the sake of their wellbeing." There was limitation to the length and the content of their screen time. The children logged onto the screen devices using their own account, and P1's husband had specific settings for each of them. "When time is up, the internet access is cut off, and Y1C1 would leave the screen device without complaining."

4.3.2 Structural Description

The structure of P1's screen time at home with the presence of Y1C1 was related to the work she did on screen devices, the amount of work she had in the household, the type of activities that the children were doing. All these factors determined the amount of P1's free time, some of which can be used as screen time.

P1 used screen devices for personal communicative purposes, which were not compulsory, and the nature of P1's screen time determined her screen time depended on the situations each day. The fact was that she was kept busy and "have no time" to use screen

devices at all.

The amount of work P1 had at home was directly related to whether she had screen time or not. Everyday chores kept her busy, cooking for a family of six, housework, sending the three children to school and daycare and picking them up in the afternoon on weekdays, accompanying the children during their outdoor activities, supervising the children's online classes, reading to the children, and other chores. When her day was filled with these tasks, "we do not have the time to watch TV," and "I have no time for screen devices at home at all."

Children's activity type mattered in P1's screen time. During non-screen-based activities, the children were usually involved in role plays, free plays, and reading. Role plays and free plays did not require parent's full involvement, but parental supervision was still necessary. The children read a lot. Since Y1C1 still needed parents' help with his reading and there was a younger child in this family, P1 spent time reading for them. When the children played by themselves, P1 could be freed from involvement in children's activities, but her time was taken up by household chores. Therefore, P1 had "no time for screen devices."

P1 experienced Y1C1's screen time at home. Y1C1 used screen devices to take online classes during the pandemic lockdown, and he needed P1's help during the process. While P1 cooked, "I need to keep an eye on how their online classes go." The children also used the laptop for entertainment when P1 was fully occupied with cooking and had limited attention to supervise their play. "I would allow them to watch cartoons using the laptop. They choose their favorite video, sitting in front of the screen side by side. The world becomes quiet, and I could focus on cooking." The children's screen time was limited, and it only occurred when

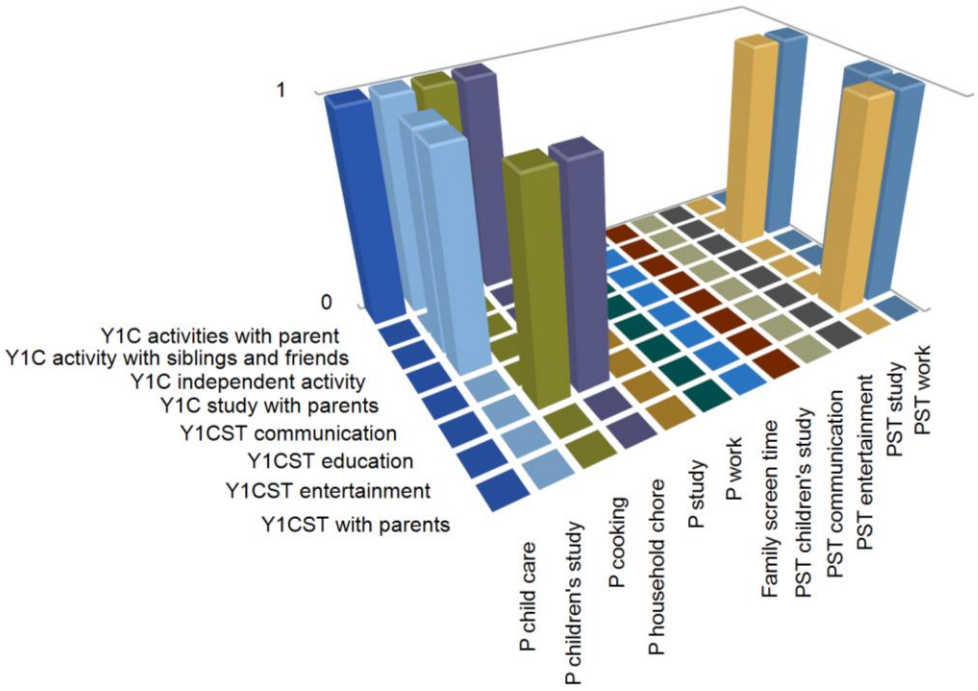
P1 was fully occupied with cooking or other chores and could not spare any time and attention for them.

4.4 Participant 2

Participant 2 (P2) was the mother of two children, who were seven years apart, and the younger child was the Y1 child (Y1C2). P2 was a full time student, and worked part-time in the customer service team of an educational institution. Her husband held a full-time job. At the time of the interview in the pandemic, both P2 and her husband worked from home, P2 had online classes, and the children both had classes online. The elder child was in secondary school, and did not require much accompany from parents. Y1C2 demanded parents' time, attention, and accompany, so P2's time and activities were closely connected with those of Y1C2. P2 and Y1C2's activities at home were shown in Figure 4.3.

Figure 4.3

P2's and Y1C2's Activities at Home



Things changed a lot before and during the pandemic. Before the pandemic, the

parents left for work or study, and the children left for school in the morning on weekdays. They finished school or work and went back home in the afternoon. However, they worked or studied from home since the lockdown, and public activities were suspended. People stayed in small social bubbles with few opportunities to get involved in group activities. Y1C2 spent most of her time at home, and there was only 1-2 hours of outdoor activities a day. P2 planned her work, study, and other tasks at home, and she took into consideration Y1C2's online classes and other activities while making plans. Figure 4.3 shows the co-ocurrence of P2 and Y1C2's activities in the home environment.

4.4.1 Textural Description

There were smartphones, laptops, a tablet, and a TV in P2's family. P2's screen time experience at home with Y1C2's presence was for the purpose of study and work. P2 used the laptop to study, finishing the reading and writing assignments for her courses, and she used her smartphone to do her part-time job, fulfilling customer service tasks by answering questions from customers.

P2 had unavoidable screen time when Y1C2 was at home. She was a full-time student, and used screen devices in her study. She took online classes. "I use my laptop for the reading and writing assignments in each course," and "I usually use my smartphone at the same time when I study on my laptop." Since there were deadlines for the assignments, P2 needed screen time to finish them even during the lockdown period when Y1C2 was at home all day. P2 also took a part-time customer service job, responding to customers' questions online, so "I need to keep connected and frequently check the information platform throughout the working time." "It usually takes me a few minutes to deal with one question, and it won't take a long time like half an hour or even longer." P2's part-time job required

that she have screen time to fulfil her tasks during working time.

When Y1C2 was at home, P2's time consisted of screen time for work and study, childcare, household chores, cooking, and Y1C2's activities not related to screen devices. P2 combined childcare, housework and cooking to some extent, by engaging Y1C2 in housework and cooking. "I deliberately engage her in the housework and teach her to cook and bake." On normal schooldays, Y1C2 finished school and went back home in the afternoon, "I sometimes teach her our native language, and sometimes she does crafts with occasional help from me." P2 had screen time for study with Y1C2 doing other activities during the pandemic, but "it never occurred this way before the pandemic, and I used to study when she was in school or after she went to bed at night."

P2 or her husband had a lot of outdoor activities with Y1C2 before the pandemic, but their outdoor activities were significantly reduced during the pandemic. "We played outside after school," and "took a walk in the neighbourhood after supper." They also took Y1C2 outside to cycle, play badminton, or to fly disk, and did not have much free time at home before the pandemic. During the pandemic, the whole family "stayed at home all day long, and only had 1 to 2 hours of outdoor activities". Compared with the time they stayed at home, the time for outdoor activities was pretty short.

Y1C2 began to have screen time at home during the pandemic, but she had little before the pandemic. During normal school days before the pandemic, Y1C2 stayed in school most of the daytime, and had a lot of outdoor activities with parent(s) after school, so she had very little screen time. "Even if she spends all her free time at home on screen devices, it's still very short." Since the pandemic, Y1C2 stayed at home taking online classes, which lasted about an hour, a small part of school hours. Therefore, she began to have much time to be

filled with activities. “There are digital books from school, she likes them, and logs onto the system to read every day.” She also had screen time for entertainment. She usually used “her daddy’s smartphone to watch cartoons and kids’ craft videos, or to play a game she learned from her sister.” “She sometimes watches movies with her sister using her sister’s laptop.”

4.4.2 Structural Description

The structure of P2’s screen time at home with the presence of Y1C2 was connected with the work she did on screen devices and Y1C2’s activities. Other factors did not matter much in P2’s screen time.

P2 used screen devices to study and to work, and her screen time was compulsory even if Y1C2 was at home. In the aspect of study, things were easier before the pandemic when she could get most of the work done during the daytime when Y1C2 was in school and after Y1C2 went to sleep at night. Starting from the pandemic lockdown, things changed much when school turned online and people stayed at home working or studying. P2 took online classes and did the reading and writing assignments while Y1C2 was active in the house. In the aspect of part-time job, P2 was required to have screen time in order to do her job during working hours. In general, P2 had her screen time when it was time for her to take classes, to do her assignments, or to work. Her screen time was not influenced much by the environment.

The amount of work in the house was not a significant factor in P2’s screen time. There were two children in the family, the elder one was an independent adolescent in secondary school, and the younger one demanded much time, attention and accompany from parents. P2 combined childcare and housework by “encouraging her to take part in the housework together with me, and she can make dumplings and bake cookies now.” Thanks

to the ages of the children, childcare did not concern P2 much, and P2 had more options in childcare and doing the household chores.

P2's screen time was related to Y1C2's activities at home, and this relationship changed in the pandemic lockdown. During normal school days before the pandemic, P2's screen time did not occur during Y1C2's presence at home. P2 took classes in the university, studied in libraries or at home while Y1C2 was in school, and she also studied at night after Y1C2 went to sleep. When Y1C2 was at home during the daytime, she either did some craft work, or leaned another language after she arrived home from school, and P2 offered supervision or help beside her. Starting from the pandemic lockdown, P2's screen time occurred while Y1C2 was active at home. P2 usually spent a comparatively longer period on her study using screen devices. Without P2's accompany, Y1C2 had other activities to fill into this period. She played by herself doing some craft work like paper cutting, cutting her dolls' hair, etc. She watched videos or played games using the smartphone of her father, who was working from home. She sometimes played with her father when he was not working, or played with her sister for a while. When P2 worked on the smartphone, her screen time was not influenced much by Y1C2's activities, because she could finish one response within several minutes each time. P2 felt that she had become fully occupied since pandemic lockdown, and she allowed Y1C2 to have screen time to guarantee her own screen time mainly for the purpose of study.

On the other hand, Y1C2 had screen time at home for study and entertainment. Y1C2's screen time for online class occurred at a fixed time, and her screen time for entertainment occurred mainly during P2's screen time for study. Y1C2's online school lasted for about an hour at a certain time of the day, and P2 used this period to do the chores.

4.5 Participant 3

Participant 3 (P3) was the father of three children, the second child being the Y1 child (Y1C3). The eldest child in the family was studying abroad, and the youngest child was about 1 year and half. P3 and his wife took care of the children. P3 ran a business and his wife helped him with it and took care of the family at the same time. The interview was conducted during the lockdown in the pandemic after school had turned online, and Y1C3 took online classes at home. P3's wife stayed at home taking care of the children and the family during this period.

4.5.1 Textural Description

There were smartphones, laptops, tablets, TV, and video games in P3's family. "We have all the screen devices you mentioned." P3 and his wife each had a smartphone. There was a tablet, which was bought for the eldest child and was occasionally used by Y1C3 at the time of the interview. There was a laptop, which was used by Y1C3 for her online classes. "She uses the laptop every day for every class, because the school is completely online." There was a TV in the family, Y1C3 occasionally watched cartoons for about half an hour after she finished all the schoolwork on weekdays, and about an hour on weekends. P3 and his wife had cancelled their TV time since Y1C3 started online classes at home. There was also a video game, which was almost never used by the family members.

P3 had screen time when Y1C3 was at home. He used his smartphone to view posts from friends, and he, together with other family members, used the smartphone to communicate with his eldest daughter, who was studying abroad, and other relatives. P3 did not "play games on my smartphone, and I've almost never watched entertainment videos on

my smartphone."

In addition to his own screen time, P3's time at home was mostly spent on childcare, supervision of Y1C3's online study. P3's wife mostly stayed at home taking care of the children and the family during the daytime because of the pandemic and the online mode of Y1C3's school, so P3 did not have many chores to do when he got home. He shared the task of childcare, and spent more time supervising Y1C3's study. "My wife and I need to spend more time supervising her (Y1C3) in her online study." "I sometimes accompany her playing blocks, puzzles, etc."

P3 and Y1C3 had about an hour of outdoor activities with other family members each day. "We go downstairs to take a walk for about an hour after supper every day. Sometimes she could meet her (Y1C3's) classmates, and they will play together." During the pandemic lockdown, they all stayed at home without outdoor activities.

Y1C3's screen time consisted mainly of online school, running from 8:00am to 8:00pm on schooldays, plus occasional cartoon watching and communication with family members and relatives. The online school started from the pandemic lockdown, and it was "rather long, from about 8:00am to 8:00pm with breaks in between". Online classes and other activities filled in the school time, so Y1C3 did not have much time for other activities on schooldays. "She's likely to spend several minutes at most on a short video." She only had about half an hour to watch cartoons on very special occasions on schooldays, but she sometimes had "about an hour to watch TV on weekends as a reward for her help in housework." Besides, Y1C3 also used screen devices occasionally to have video chat with her sister, grandparents, cousins, and other relatives. It also occurred that "she comes to me to see what I'm reading on my smartphone, and stays for a few minutes."

4.5.2 Structural Description

The structure of P3's screen time with Y1C3's presence at home was related to Y1C3's activity types, the amount of work he had in the household, and the nature of his screen time.

Y1C3's activity type played an important role in P3's screen time. Y1C3's online school was organized in a very effective way, and she was engaged in school activities for about 12 hours on weekdays. This greatly reduced parents' pressure and workload of keeping her at home all day during the pandemic. Although online, the school was run almost in the same way as the children were at school, and the teacher was even in charge of the self-study time from 6:30pm to 8:00pm. During the time of online school, P3 could arrange his own activities. Y1C3 did not have much time before bedtime after she finished her online school. During this period, she sometimes asked P3 to play with her, and sometimes played by herself. Y1C3 occasionally joined P3's screen time, and it only lasted a few minutes. In this case, P3's screen time was not influenced much by Y1C3's activity.

The amount of work P3 had in the household determined that P3 had time for screen devices. P3's wife "mainly stayed at home taking care of the children and the family", and undertook most of the household chores. P3 did not mention his part of the housework, so it was likely that most of the housework had been finished when he got home. Therefore, he had time to use screen devices at home.

P3 used screen devices for the purposes of leisure and communications, and this meant that his screen time was flexible. The light workload in the household and Y1C3's participation in online school provided the time and opportunity for P3's screen time while

Y1C3 was at home.

4.6 Participant 4

Participant 4 (P4) was the mother of one Y1 child (Y1C4), who was the only child in the family. P4 ran a business and her husband held a full-time job. P4 and her husband took care of Y1C4, and grandparents regularly came for a visit on weekends. This interview was conducted during the pandemic period, and Y1C4 was having online school. P4 stayed at home taking care of the family and Y1C4, who stayed home all day attending online school.

4.6.1 Textural Description

There were smartphones, a tablet, and a laptop in P4's family. When Y1C4 was at home, P4 sometimes had chances to use her smartphone and the tablet. "It is my husband and I who mainly use smartphones." "We use them for the purpose of communications with others, and to search for Y1C4's learning materials." "We, as a family, use the tablet to watch movies on weekends." "We only use the laptop occasionally to deal with issues concerning our business."

P4's screen time experiences with Y1C4 at home were mainly reading and occasional entertainment. She used her smartphone to communicate with others, but it took up a very short time. P4's screen time was mainly for reading. "We have the habit of reading before bedtime every day, and everybody in the family reads." "I have downloaded reading software on my cellphone, and frequently read on it." P4's screen time also included a small part of entertainment. She had time to use her smartphone for entertainment while Y1C4 was playing with his father in another room. There was also a family movie time at every weekend. Besides, P4 sometimes searched for Y1C4's learning materials on her smartphone or the tablet.

In addition to screen time, P4's time at home with Y1C4's presence was composed of childcare, Y1C4's education, and household chores. Although childcare was no longer a major task for P4, she still spent time creating a favorable environment for Y1C4 to calm down or to focus on his study in cases when Y1C4 had difficulty in doing so by himself. P4 spent some time on Y1C4's education during the online school period. Y1C4 was taking online school at home due to the pandemic, and P4 ensured that he was focused in his study. "I do not usually sit beside him, but I need to remind him when he is distracted." Housework also took some of P4's time at home, but it was not a prominent question when much could be finished while Y1C4 took online classes.

P4 and Y1C4 normally had outdoor activities once a week when they could spend several hours outside at weekend. "I've promised him to take him out every week, and he enjoyed that." When Y1C4 finished his homework early in the evening and they had enough time before bedtime, the whole family would also "take a walk downstairs".

Y1C4 had screen time at home for education and occasional entertainment. He took online school at home, having six classes every school day, and his screen time for education was fixed and compulsory. His screen time for entertainment consisted of family movie time once a week, half an hour of computer games once a week, and occasional video watching together with his mother for a few minutes each time.

4.6.2 Structural Description

The structure of P4's screen time with Y1C4 being active at home was related to the work she did on screen devices, the type of activities Y1C4 was doing, and the amount of work she had in the household.

P4's screen time at home was mainly for the purpose of family and her personal

entertainment, Y1C4's study, and reading, and was partly determined by Y1C4's activities and the family environment. In the aspect of entertainment, the family movie time was a routine at the weekends when both parents and Y1C4 had time, and P4's personal entertainment usually happened when Y1C4 was playing with his father and P4 had time to retreat to another room. "We (P4 and her husband) try not to have screen time for entertainment in front of Y1C4." In the aspect of Y1C4's study, P4 sometimes "sit beside Y1C4 to see how the online class is delivered," and she had screen time to search for answers to Y1C4's questions and Y1C4's learning materials. During the family reading time, P4 read on her cellphone "in order to create a favorable family environment for Y1C4 to develop the habit of reading."

P4's screen time was closely related to Y1C4's activities, which influenced the amount of housework P4 had when Y1C4 finished all the school work. Y1C4 was taking online school, which was organized almost in the same as in school. "They even have music and PE classes in the online mode." Y1C4 had six classes every school day, and "the teachers delivered the classes efficiently just as if they were in the classroom." Therefore, students must be fully involved in the classes. In addition, Y1C4 had homework after the online school, and he could finish it independently. P4 had enough time to deal with other issues while Y1C4 was taking classes and writing his homework independently. "He sometimes finished the homework really late, like 7:00pm or 8:00pm." Efficient online school and homework led to the fact that P4 did not mention the chores at home, and that P4 had free time when Y1C4 finished his homework in the evening or at night.

4.7 Participant 5

Participant 5 (P5) was the mother of two children, the elder one in the first year of

schooling (Y1C5) and the younger one being 2 years old. Both P5 and her husband worked full-time. P5 dropped off, picked up and took care of Y1C5 every day, and her husband arrived home late in the evening and was sometimes dispatched to tasks that kept him from going home for months. Grandparents lived near to P5's home, and took care of Y1C5's younger sister, who was not yet in daycare. P5 was kept busy after she arrived home with Y1C5 after work, and almost had no screen time at home. She was fully occupied by cooking, other chores, childcare, and outdoor activities.

Figure 4.4

P5's and Y1C5's Activities at Home

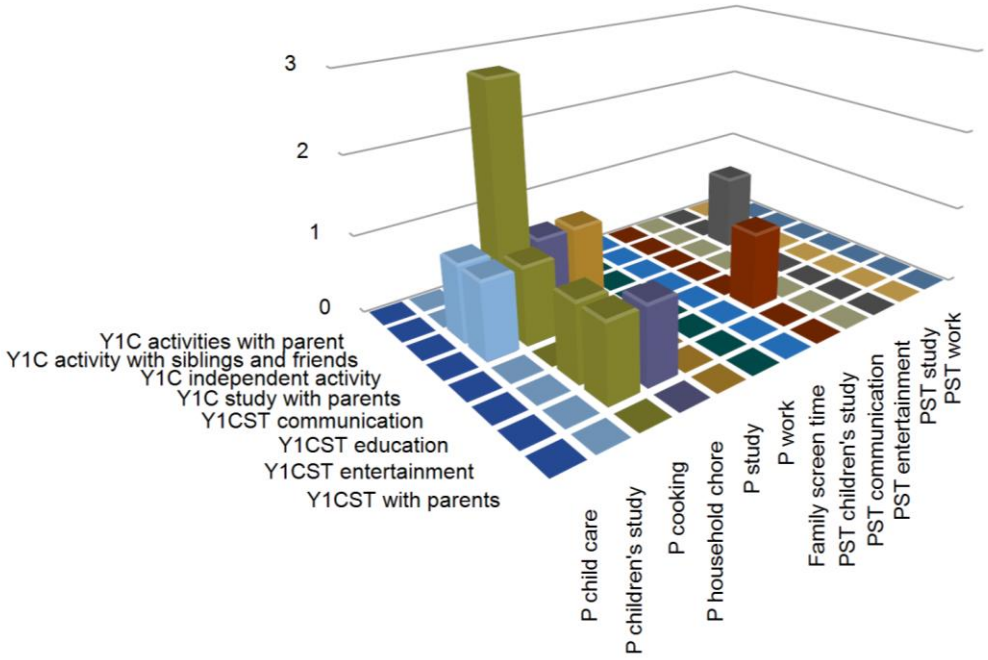


Figure 4.4 shows that P5's activities included non-screen-based ones, such as reading for Y1C5, cooking, chores, and study, and screen-based ones, such as Y1C5's study. Except the occasional screen time for entertainment, most of P5's time at home was dedicated to cooking, chores, and Y1C5's activities.

4.7.1 Textural Description

P5 had a smartphone and a computer at home. “My cellphone is frequently used at home” for Y1C5 to learn, to watch cartoons and to listen to stories, but “I had little time to use it at home.” There was a computer at home, and was occasionally used either for Y1C5’s online classes or for his cartoons. There used to be a TV, but they did not repair it after it broke down “in order to prevent Y1C5 from watching too much TV.”

When Y1C5 was active at home, P5’s screen time was mostly to assist Y1C5 in his learning. Only when Y1C5 got immersed in his play with his toy blocks could “I check my cellphone to see whether there are messages for me, but I still need to rush to clean up the rooms and to cook while he plays by himself.” “Entertainment almost disappeared from the little screen time at home.” Y1C5 had an online learning program and he sometimes needed P5’s help with the exercises. That constituted the major part of P5’s screen time at home.

P5’s time at home was filled with cooking, other chores, and childcare. When P5 and Y1C5 arrived home in the afternoon, P5 started preparing to cook, and she needed time to clean up after supper. She spent more time cleaning up at weekends when both children stayed at home for longer hours.

There were regular outdoor activities in P5’s family. P5 and her husband took Y1C5 for outdoor activities every evening, “hoping that he could grow stronger by taking more physical activities”. When they had more time at home at weekends, P5 took care of both children and had longer hours for outdoor activities on every morning of the weekend, such as climbing hills, visiting parks, etc.

Contrasting with P5’s tight schedule, Y1C5 had screen time at home. “He has 15 to 30 minutes of online learning program every afternoon after we arrive home,” and “he might

ask to watch cartoons for a while after the learning program." The learning and the cartoon lasted for about 40 minutes, and Y1C5 then listened to stories using P5's cellphone. "Y1C5 has another 30 minutes of screen time for cartoons after supper while I (P5) am cleaning up." P5 had time to focus on cooking and other chores while Y1C5 had screen time. When the family visited grandparents at weekends, Y1C5 demanded for more screen time for cartoons in exchange for eating well. "He knows the soft spot of grandparents, and I allow him another 30 minutes of cartoons." Generally speaking, Y1C5's screen time provided the time for P5 to finish the chores at home.

4.7.2 Structural Description

P5 held a normal full-time job and she did not have demand for obligatory screen time at home. Her screen time was mainly composed of assistance to Y1C5 in his online learning program. The structure of her screen time was related to the work she did on screen devices, the amount of work she had in the household, and the type of activities that Y1C5 was doing.

P5's screen time at home was mainly for the purpose of Y1C5's online learning, and this nature determined that her screen time depended on how much help Y1C5 required during his learning. P5 did not have screen time for other purposes. "It often occurred that I checked my cellphone for messages on Sunday night after I did so on Friday afternoon while leaving my office." She took care of the children, read for them, cooked, did the chores, and had outdoor activities with the family, having no time at all to use her cellphone. P5's screen time to help Y1C5 with his learning was short, and it usually occurred when Y1C5 had difficulty to finish the exercises in the learning.

The amount of work in the household determined whether P5 had screen time at home. P5's daily time at home consisted of several slots, i.e., cooking, dinner time, cleaning up,

outdoor activity, and bedtime routine. When both children were at home at weekends, she needed more time on childcare, because the two children were not old enough to play together. With every time slot full, P5 did not have time for screen devices.

Y1C5's activities mattered in P5's screen time. Y1C5 had well-arranged routines at home every day after school, screen time for learning and entertainment, story time accompanied by optional independent play, dinner time, screen time for entertainment, outdoor activity, and bedtime routine. Y1C5 had independent activities that did not require P5's accompany and involvement, but P5 was cooking and doing other chores at this time. When P5 finished the housework, she took Y1C5outside for physical activities. Therefore, Y1C5's independent activities only provided the time for P5 to finish the cooking and other chores.

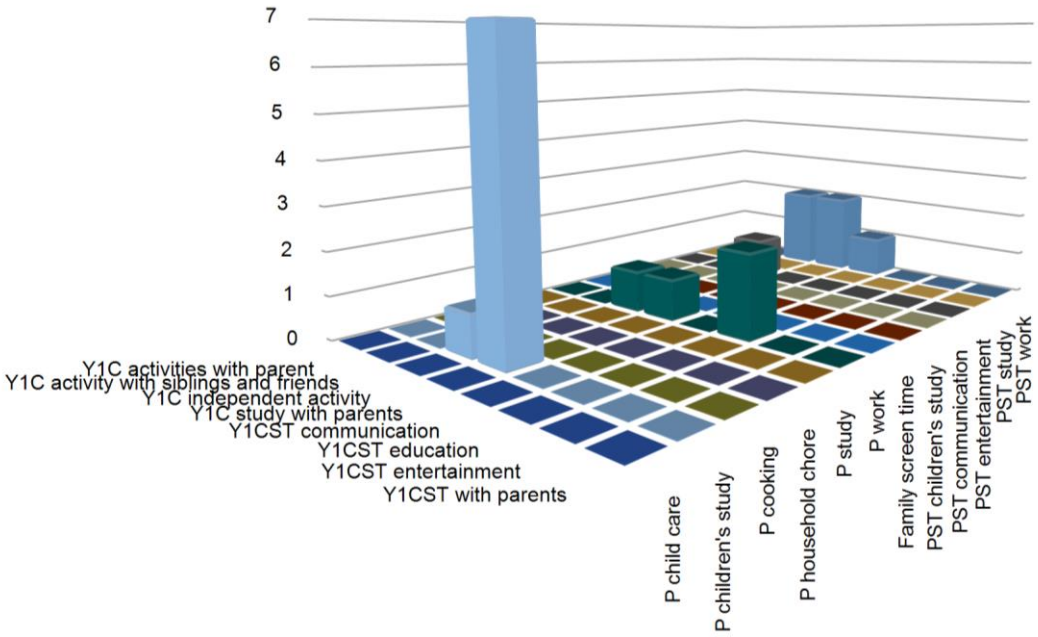
4.8 Participant 6

Participant 6 (P6) was the mother of one Y1 child (Y1C6), and was doing a full-time job as a teacher in a secondary school. She took care of Y1C6 with the help of her mother. Her husband also held a full-time job, but was dispatched to work abroad. Y1C6's grandma was mainly in charge of cooking, household chores, drop-off and pick-up of Y1C6. P6 was mainly in charge of P6's activities at home. Y1C6 went to P6's office after school in the afternoon, and they went back home after P6 finished her work.

P6's activities were relatively simply as is shown in Figure 4.5, working with and without screen devices, supervising Y1C6's study, and occasional screen time for entertainment. Since P6's mother helped her with cooking and other chores at home, she could focus on her work and Y1C6's activities.

Figure 4.5

P6's and Y1C6's Activities at Home



4.8.1 Textural Description

There was a computer, a tablet, one smartphone for each of P6 and her mother, and a TV at home. "I delivered my classes online during the online school period in the pandemic." "We have a tablet, mainly used for Y1C6's online extracurricular classes." The smartphone was mainly used by P6 for "homework assignment, homework correction, communications with students' parents, shopping, and communications with family members." There was a TV in the family, and "Y1C6's grandma sometimes watches for a while when Y1C6 is in school, and it is always off when Y1C6 and I come back home."

P6 had screen time when Y1C6 was active at home during the pandemic lockdown, and had very little screen time at home when school and work went back to normal. During the pandemic lockdown, they stayed home working or studying. "I delivered online classes,

assigned homework online, corrected it online, etc." After the lockdown, "school is no longer online, and I'm with Y1C6 most of my time at home. If I have screen time at home, it must be unavoidable and related to work."

P6 was with Y1C6 most of the time at home, and was mostly involved in Y1C6's activities. Since Y1C6's grandma was helping in the family, chores and cooking were not concerns of P6. "I supervise her to finish all the homework after she finishes school in the afternoon." "We also do some exercises on thinking." "I guide her to study most of our time at home." P6 sometimes had short screen time at home for work. During the pandemic lockdown, P6 worked from home, and her time at home consisted of screen time for work and occasional entertainment, and time to supervise Y1C6's study.

P6 did not have much time for outdoor activities with Y1C6. "Only when we arrive home early after I finish work could I accompany her to ride her bike downstairs for a while." That was the only outdoor activity for them. However, P6 sent Y1C6 to extracurricular programs, where Y1C6 participated in different physical activities.

Y1C6 had screen time for learning, communication and occasional entertainment. "She has three online classes for about 45 minutes." "She had video phone calls with her daddy 2 or 3 times a day during the pandemic lockdown, at least half an hour each time." "When school reopens, she still contacts with her daddy each day, but only for about 10 minutes on normal schooldays." Y1C6 had screen time for entertainment, mostly "watching two pet cats she loves". When grandma was having screen time for entertainment, she would go to have a look what it was.

4.8.2 Structural Description

The structure of P6's screen time at home was related to what she did on screen

devices and the type of Y1C6's activities. P6's life at home was comparatively simple, working when there was a requirement for her to do so and taking care of Y1C6 mainly in her study. With her mother helping in the family, P6's time at home was not distributed to cooking and housework. Therefore, P6's screen time at home was not related to the amount of work she had in the household such as cooking, housework and other chores.

P6's screen time for work was mandatory, and her screen time for entertainment was determined by Y1C6's activities. P6 had longer screen time for work during online school period, and still corrected students' online homework when school reopened. "It was noisy when I delivered online classes, and Y1C6 was chatting with her daddy at that time." "When I was having screen time on other tasks in my work, I would assign some tasks for Y1C6 to do independently." Y1C6 sometimes strayed into play with her toys on excuses such as drinking water, using the washroom, etc. "I occasionally have screen time for entertainment, when Y1C6 is writing the homework that she could finish independently. But Y1C6 does not know it because I purposefully placed her desk in front of mine." That means that P6's screen time for entertainment was determined by how much homework Y1C6 could finish independently and P6 intentionally avoided screen time for entertainment in front of Y1C6.

Y1C6's activities at home included screen time for learning, study with P6, occasional play with friends at weekends, and occasional screen time for entertainment at noon. Y1C6's screen time mostly occurred when P6 was working and Y1C6 spent the screen time communicating with her daddy. On normal schooldays before the pandemic, Y1C6 went back home for lunch, and had a few minutes of screen time for entertainment after she arrived home before lunch. The rest of her time at home was filled with activities like reading and learning with P6 when P6 finished her work. When recreational centres reopened

after the pandemic lockdown, Y1C6 spent time in extra-curricular activities like swimming and dancing at weekend.

4.9 Participant 7

Participant 7 (P7) was the mother of one Y1 child (Y1C7), and she was a full-time student doing a part-time job. P7's husband held a full-time job, and sometimes worked on weekend shifts. Y1C7 was in school from 9:00 am to 3:00 pm, Monday to Friday, and she was in an afterschool program from 3:00pm to 6:00pm on schooldays.

Figure 4.6

P7's and Y1C7's Activities at Home

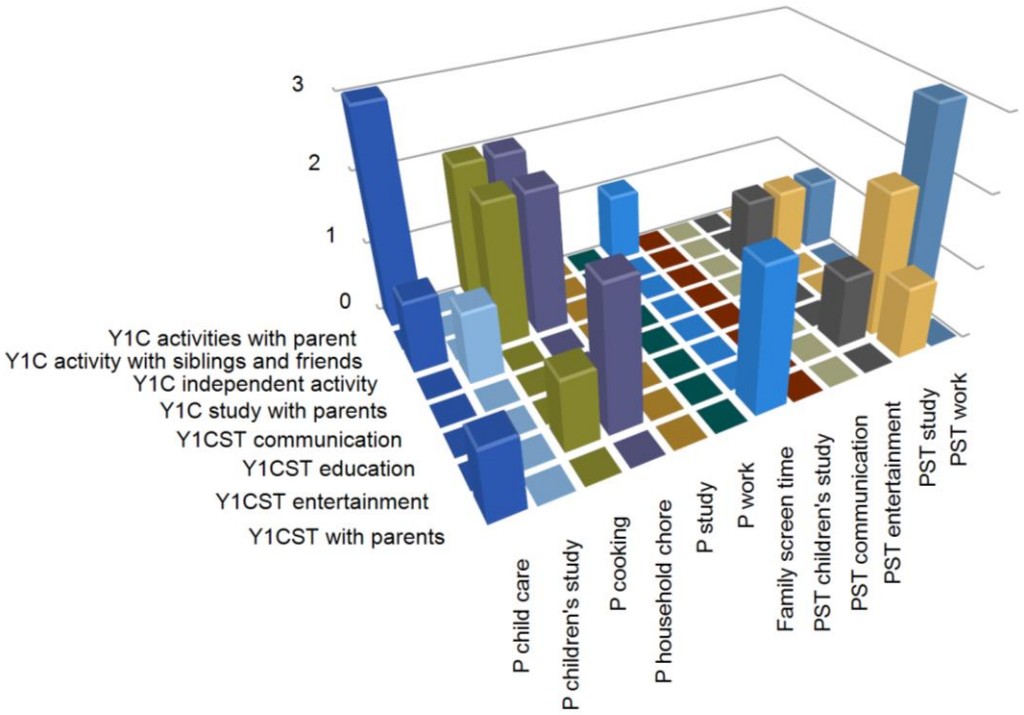


Figure 4.6 shows that P7 had a lot of work to do while Y1C7 was at home, including study, part-time job, taking care of the child, cooking, chores, etc. She needed to have arrangements for Y1C7 while she was engaged in each of the activities. Therefore, P7's activity types scattered over most of the activity categories as is shown in Figure 4.6.

4.9.1 Textural Description

P7 had a laptop, a TV, a tablet, and smartphones in her family. P7 used the laptop for her study and her work, and she and her husband each had a smartphone. The tablet was not used at high frequencies. “We have a TV”, and “I just turn on TV while cooking”. “I prefer TV” when Y1C7 asked for screen time.

P7 had screen time while Y1C7 was active at home. “I usually check my phones in the morning and the evening” to keep my work and study going smoothly. “During COVID, everything turned online”, and P7 had eight to nine hours of screen time in total for work and study. When Y1C7 was at home, P7 had some screen time for entertainment. She left the TV on while cooking, and she usually turned on the screen as the background while she was playing indoor games with Y1C7.

When Y1C7 was at home, P7’s time was spent on activities with Y1C7, reading with Y1C7, cooking, household chores, and screen time for purposes of communication, study, and part-time job. “We play indoor games,” and “we talk … and ask her to tell us about her day.” “When she’s on her bed, we usually read her a story.” “I also baked a lot … I always make sure to engage her (Y1C7) in housework as much as I can.” P7’s screen time mostly occurred during the period when Y1C7 was in school and afterschool on schooldays, and she also had screen time during the normal working hours in the daytime at weekends when Y1C7 was at home.

P7 had short outdoor activities with Y1C7. P7 picked up Y1C7 from afterschool every evening on schooldays and walked home. The outdoor activities at weekends depended on P7 and her husband’s schedule. “If we have plans to go outside, we usually spend the whole day out.” However, it also happened that “my husband is working and I have to study” at

weekends, and they did not have outdoor time in such cases.

Y1C7 had screen time at home. Y1C7's screen time was mostly for the purpose of entertainment, but she learned in her screen time. "She (Y1C7) is learning language just by watching (cartoons)." When P7 and her husband both worked or studied when Y1C7 was at home, "I usually give her a screen time for 2 or 3 hours at a stretch." Y1C7 had "a TV time for about 40 minutes" in the evenings of schooldays.

4.9.2 Structural Description

The structure of P7's screen time with the presence of Y1C7 at home was mainly related to what she did on screen devices, and Y1C7's activity types were related to P7's screen time.

Most of P7's screen time was used to study and work, and it was mandatory. There were deadlines in her study, and she had certain amount of work to finish during her working hours. In order to finish these tasks, P7 needed to guarantee that she had enough screen time for the tasks. It was easier on schooldays when Y1C7 stayed in school and afterschool most of the day from 9:00 am to 6:00 pm, and P7 was "most productive" and could finish most of the work during Y1C7's absence. On weekends and holidays, things became more complicated because P7 sometimes had to work or study and sometimes her husband worked on weekend shifts and could not help in taking care of Y1C7. In these cases, P7 must make arrangements for Y1C7 to ensure that she could have uninterrupted screen time for work or study.

Although P7 had screen time for entertainment, the entertainment co-occurred with other activities. P7's screen time for entertainment occurred while she was cooking or doing chores while Y1C7 was at home, and the screen also served as the background while she was

playing indoor games with Y1C7. There was a family screen time when P7 spent time watching a movie or some other video with Y1C7, but it was an opportunity for them to discuss and better understand the content of what they watched.

Since P7's screen time could not be changed according to the home environment, Y1C7's activities were, to some extent, determined by P7's screen time for work or study. When P7 was not working or studying on her screen device, she had time to devote to Y1C7, such as doing indoor games, having outdoor activities, etc. When P7 needed screen time for work or study, Y1C7 was required to do independent activities such as craftwork, which were unlikely to last the whole process of P7's screen time. P7 would give her a screen time of 2 or 3 hours if other activities could not hold Y1C7's interest. That is to say, P7's screen time for work or study co-occurred with Y1C7's screen time for entertainment.

The amount of work in the household did not matter much in the screen time of P7 or Y1C7. P7 tried to ensure that she engaged Y1C7 as much as she could in housework and cooking, and the time spent on housework and cooking sometimes co-existed with their screen time for entertainment.

4.10 Participant 8

Participant 8 (P8) was the mother of two children, the elder one being in the first year of schooling (Y1C8) and the younger one being 13 months old. She took care of the family and the children at home, and her husband worked full-time, having working hours both in the office and at home due to the pandemic. Y1C8 took online school from home during the first few months of school, and he went to attend school before the end of the first term. P8's mother-in-law lived with the family, and mainly helped with cooking and chores. The younger child was learning to walk, and P8 was fully occupied with childcare to ensure the

safety of the younger child.

Figure 4.7

P8's and Y1C8's Activities at Home

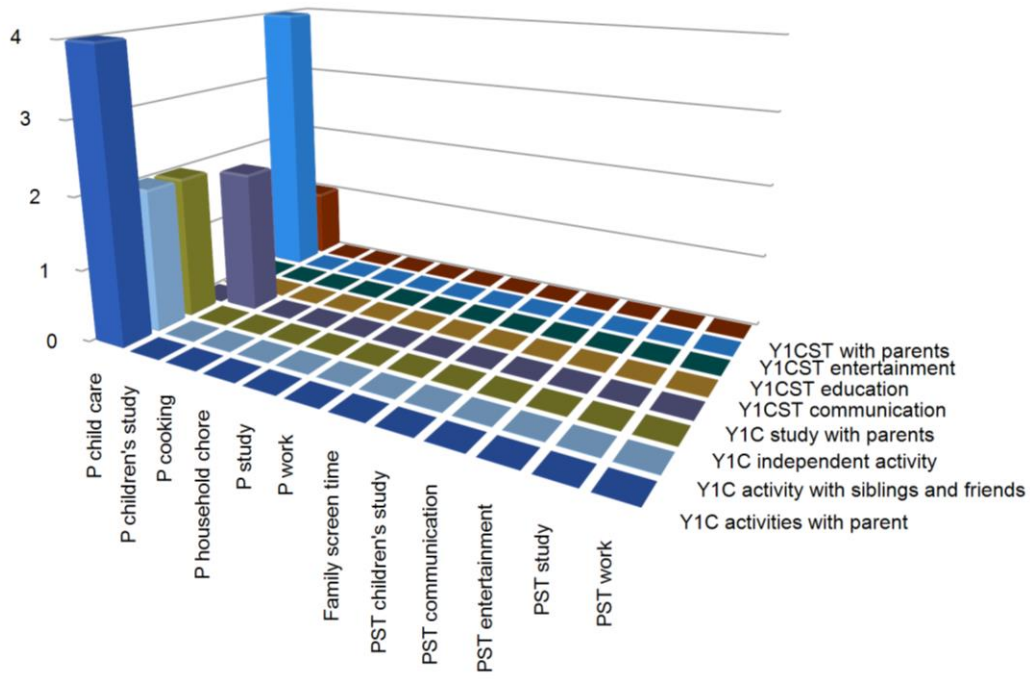


Figure 4.7 shows that P8's time were mostly occupied by childcare of the younger child in the family and she got involved in Y1C8's activities which allowed her to take care of the younger child. She had no time for other activities than childcare and reading for children when Y1C8 was at home.

4.10.1 Textural Description

There were laptops, smartphones, a tablet, and a TV in P8's family. Each adult in the family had a cellphone. P8's husband had two laptops, "one is for work and the other is no longer used, but sometimes Y1C8 asks to sit in front of it and use it while his father is working." Both the TV and the tablet were mainly used by Y1C8.

P8 had little screen time during the daytime, and her screen time mainly occurred after

the children fell asleep at night. “I only use cellphone at home, because it’s convenient,” and “I usually stay up browsing the shopping website or friends’ posts.” “We don’t have time for TV,” and “I don’t even have any time to myself during the daytime.”

P8 spent most of her time on childcare. She took care of Y1C8 and his younger brother from the very beginning of the day, wakening up Y1C8 while the younger child had already gotten up, dressing them, washing them, and feeding them. When Y1C8 was away in school, she looked after the younger child, who was learning to walk, playing with him, assisting him in his walking, preparing food, feeding him every few hours, and helping him in his naps. When Y1C8 was at home, he asked for parents’ accompany. P8 took some time reading with him. “We read several times a day when he attended online school, but we only read at bedtime now.”

P8’s outdoor activity with Y1C8 mainly occurred at weekends when it did not rain or snow. Y1C8 had a lot of outdoor activities every day. His father picked him up from school every afternoon, and they walked home playing on their way. “They almost spend two hours each day on their way home.”

Y1C8 had screen time at home. He had extra-curricular online classes “lasting 15 to 20 minutes each time”. After the online class, he sometimes used the tablet to play games for a short while before his parent took the tablet away. In addition, he also had “20 to 40 minutes of TV time watching cartoons every day”.

4.10.2 Structural Description

Although P8 had screen time at home, her screen time mainly occurred after the children had fallen asleep at night. The structure of P8’s screen time at home with Y1C8’s presence was related to the tasks she performed on screen devices and the amount of work

she had in the household.

P8 used her screen device to shop online for the family and to view friends' posts, and her purposes determined that her screen time was not mandatory and could be flexible. In terms of shopping, she could do it when it was convenient in most cases. Browsing through friends' posts kept P8 connected with friends, but it was not a task that must be fulfilled at a certain time. P8 chose to have her screen time after the children went to bed because "when they (the children) saw me using my cellphone, they would come to grab it, press the buttons, and then throw it away." In order to keep the children from doing this, P8 tried to avoid screen time in front the children.

The amount of work at home determined that P8 did not have much screen time. Although P8's mother-in-law was helping her with cooking and chores, she was busy looking after the younger child during the daytime. When both children were at home, childcare was still a major task for P8, and involvement in Y1C8's activities was also an important part. P8 gave priority to children's activities, which left little time for her.

Y1C8 had screen time when P8 had limited time and attention to engage in his activities but expected him to keep quiet. Y1C8 went to bed later than his younger brother, and P8 went through the bedtime routine with the younger child first. During this period, "He (Y1C8) had 20 or 40 minutes of TV time to watch cartoons." P8's husband sometimes attended meetings while he worked from home with both children at home, and he required a quiet environment for the meeting. At this time, P8 took care of both children in the living room, but P8 sometimes had limited attention for Y1C8 when the younger child needed to take a nap. In this case, Y1C8 also had some TV time so that he stayed quiet. In general, screen time was used as a tool to keep Y1C8 quiet when a quiet home environment was

required, and Y1C8's screen time did not necessarily co-occur with the screen time of other family members.

Chapter 5: Results of the Study

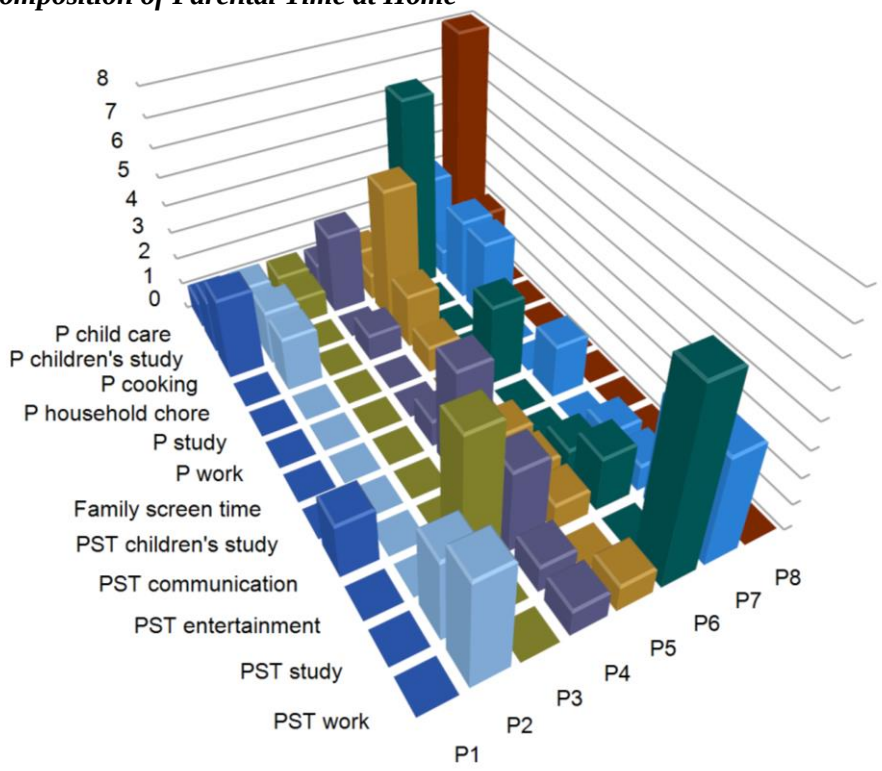
Parental screen time at home with the presence of their Y1 children is influenced by the type of screen time and factors in the context, such as the amount of work at home, Y1 children's activities, etc. The composition of parental time at home shows how parents distribute their time at home to different activities. The participants' accounts of their screen time experiences reveal their Y1 children's activities at home. The composition of children's time at home shows what Y1 children actually do at home. A closer look at parental screen time and children's screen time discloses the fact that in what context parents and children have screen time. It can be easily figured out what relationships exist between parental and children's screen time and the reasons for children's screen time.

5.1 The Composition of Parental Time

The data collected in this study show that parents' time at home is composed of screen time and non-screen time. Their screen time consists of the time they spend on screen devices to work, to study, to communicate, to assist their Y1 children in their learning, to entertain themselves, and to share the time with other family members. Participants' non-screen time mainly refers to the time they spend on childcare, children's study, cooking, housework, their own studies, and work. The detailed information is illustrated in Figure 5.1.

Figure 5.1

Composition of Parental Time at Home



The distribution of parents' time at home shown in Figure 5.1 implies that it is impossible for a parent to evenly distribute the limited time at home among all activities identified in this study. Parents need to finish different tasks at home while their Y1 children are present, so they prioritize the different activities. When they do not have enough time for everything, the less important activities are left out. If parents are required to work or study, priorities are given to work or study, and some activities are likely to disappear from parental time at home. P7 studied and worked at home in addition to the regular cooking and chores, and she did not have time for Y1C7's study at home. P6 also worked from home for a period of time, and she did not spend time on cooking or housework. The fact is that her mother helped her with cooking and housework. Similarly, P8's mother-in-law helped her with cooking and housework, so her time at home was only spent on childcare of a toddler and

Y1C8's reading. For parents who do not have extra help in the house, cooking and housework take up a large part of their time at home. P1's time was spent on childcare, children's study, cooking, housework, and essential communication. All of P1's activities were basic to keep the family function well. P5 had similar situations at home, and she spent a large proportion of her time at home on cooking, housework and Y1C5's study. When the Y1 children can be engaged in independent activities, parents will have less pressure in their time. P3 and P4 are examples who felt less pressure in their time than the other participants in this study, because Y1C3 and Y1C4 were taking online schools which were highly efficient and were described to be the real classroom online. The class schedules remained unchanged, and the students simply took all the classes and activities online. In this way, the parents had enough time for work, cooking, and housework while their Y1 children were having online school, and they also had time for activities with their children when the online school was over.

Generally speaking, parents prioritize the activities at home and only have enough time for some of them. Priority is usually given to activities to meet basic living requirements like cooking or working. Other activities are given different importance in different families.

5.2 The Composition of Y1 Children's Time

Y1 children's time at home is also classified into two major types, screen time and non-screen time. Since all the interviews were conducted during the pandemic, some schools were affected and some Y1 children stayed home attending online school. Children's screen time includes their screen time for education, entertainment, communication with family members or relatives, and screen time with parents. Their non-screen time is composed of time spent on activities with parents, activities with siblings or friends if applicable,

independent activities, and study with parents' assistance.

Figure 5.2

Composition of Y1 Children's Time at Home

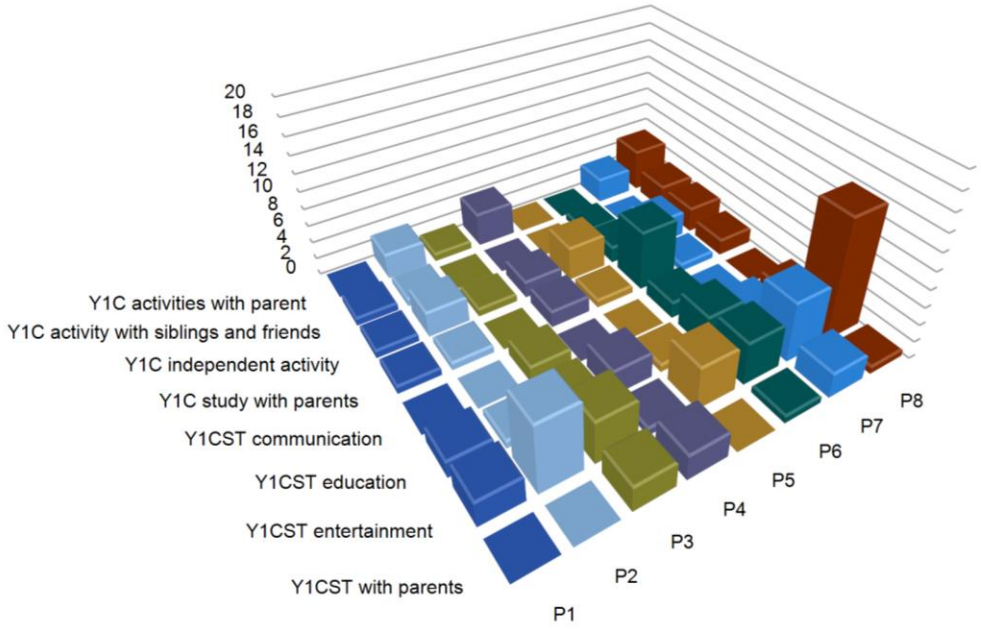


Figure 5.2 reveals the distribution of Y1 children's time at home. The Y1 children require company during most of their non-screen time. They either need parents' company to play games and to learn, or they need sibling or friends to play with. Playing with friends usually happens on weekends, during holidays or outdoor time. If the Y1 child has sibling(s), parents still need to spend some time supervising their play. During their independent activity, Y1C1 played with his toys or role plays, but he played with his siblings in most cases; Y1C2 did some craftwork or played with her dolls; Y1C3 wrote his homework; Y1C4 did her homework and played with toys; Y1C5 played with his blocks, sometimes read picture books and listened to stories; Y1C6 played with her toys; Y1C7 did craftwork or artwork; and Y1C8 played with his toys. All the participants mentioned that their children's independent activities did not last long and they preferred that parents got involved in their activities.

All participants in this study had plans for their Y1 children's screen time, including plans for the duration and content of screen time. Y1 children's communication through screen devices took place when their parents communicated with family members or relatives or when the caregiver was doing specific tasks. Y1 children's screen time for education were mostly fixed, and it was online school for Y1C1, Y1C2, Y1C3, and Y1C4, and extracurricular classes for Y1C2, Y1C5, Y1C6, and Y1C8. Y1 children's screen time for entertainment usually occurs when they enjoy their time alone, and most of them spend time watching cartoons or short videos. Y1C2 and Y1C4 played games during their screen time for entertainment, and the rest of the Y1 children in this study watched cartoons or videos on different screen devices. No matter if it was for cartoons or games, all participants monitored the content and duration of their Y1 children's screen time. Y1 children's screen time with parents referred to situations when Y1 children joined their parents' screen time for entertainment or special family movie time for Y1C4 and Y1C8.

The analysis shows that most of Y1 children's activities involve their parents' participation. Only when the Y1 children are engaged in independent activities like independent play and homework writing, online education and screen time for entertainment parents are free from children's activities, having time for other tasks.

5.3 The Composition of Parental Screen Time

In addition to the examination of parental time at home, detailed information about the context of parental screen time is valuable in understanding parental and children's screen time. The analysis shows that Y1 children's activities differ when their parents perform different tasks on screen devices. More information about parental screen time and children's activities is provided in Figure 5.3.

Figure 5.3

Parental Screen Time at Home

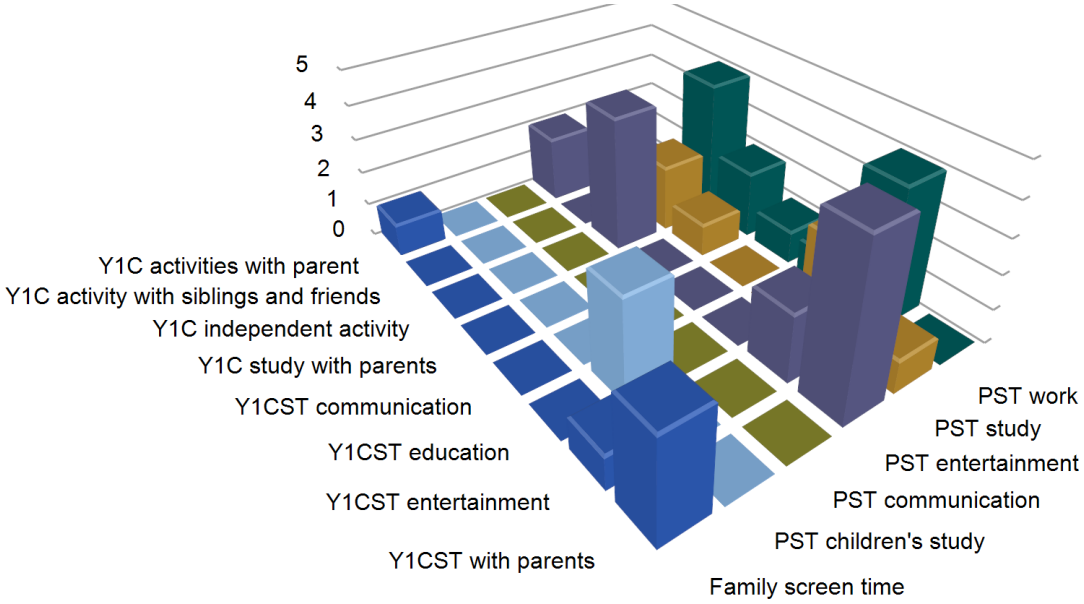


Figure 5.3 reveals the co-occurrence of parental screen time and Y1 children's activities. When parents work or study on screen devices, they usually find for their Y1 children some activities that could hold the children's attention for a period, so that they can focus on their work or study. These activities include children's independent play with toys or doing a project or homework, study beside their parents, screen time for entertainment, and staying with the other parent playing games or having screen time. In this case, parental screen time for work or study does not serve as a model for children to have screen time for entertainment because they have totally different purposes. Determinants at the family level require that children keep focused on their own activities so that parents could work or study without being interrupted, and parents choose screen time for their children only when they do not have other better choices. Children's screen time of this type can be expected to be modified by changes in determinants at the family level, such as introducing assignments, play pals, etc.

Parental screen time for entertainment occurs in two different situations in this study, being away from children when the children are engaged in independent activities or being in front of the children. Some parents avoid screen time for entertainment in front of their children, and they have their screen time for entertainment without children's knowing, for example when their children are writing homework independently. For parents who have screen time for entertainment in front of their children, their screen time is likely to co-occur with their children's screen time for entertainment. Parental screen time for entertainment in front of children serves as the model for children's screen time for entertainment. In order to reduce children's screen time of this type, parents are recommended to reduce their own screen time for entertainment.

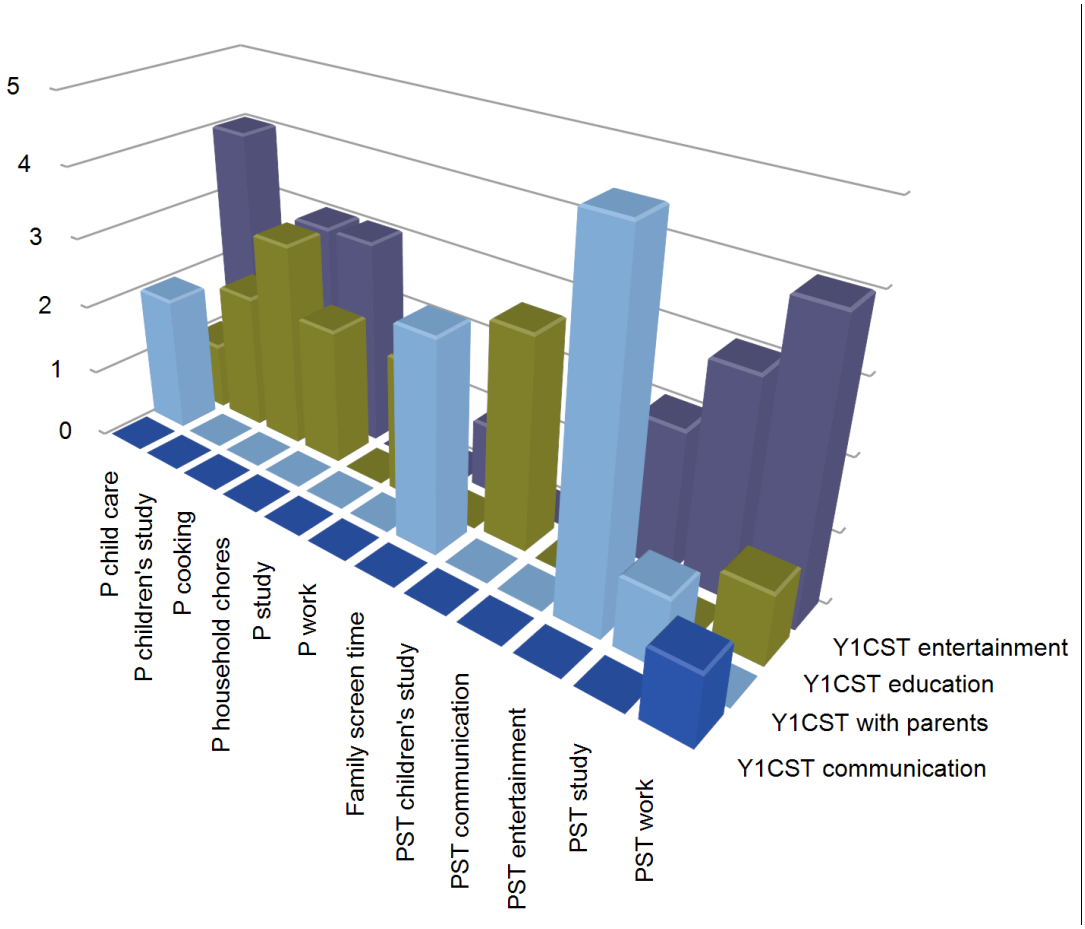
5.4 The Composition of Y1 Children's Screen Time

The findings of this study indicate that children do have screen time during parental screen time, but that does not infer that there is a causal relation between them. An examination of parental activities during children's screen time reveals more information about the situations leading to Y1 children's screen time.

Figure 5.4 shows the co-occurrence of different types of children's screen time and parental activities. Children do not have much communication using screen devices, so communication does not contribute much to children's screen time. Although children have screen time for education, it is not of much question even in the cases of P3 and P4, whose Y1 children had more than 6 hours of online school every school day during the pandemic.

Figure 5.4

Children's Screen Time at Home



Children's screen time for entertainment is what should be controlled in order to reduce children's excessive screen time. Figure 5.4 reveals that parents are engaged in childcare, cooking, housework, study, work, and screen time for entertainment while children have screen time for entertainment. There are only 2 coding references showing that parental and children's screen time for entertainment co-occur. That means that parental screen time for entertainment is not the major reason for children's screen time for entertainment. This finding contradicts the previous literature claim that reduced parental screen time (for entertainment) is the way to control children's screen time.

Y1 children's screen time with parent refers to family screen time or the situation that

children come to peep at their parents' screen devices for a few minutes watching a short video or just taking a look at what their parents are doing. The family screen time is actually an opportunity for parents and children to communicate. In the case of children peeping at their parents screen devices, all the participants mentioned that it only took a few minutes. Therefore, children's screen time with parents does not bring much question to children's excessive screen time, either.

From a theoretical perspective, the modelling function of parental screen time for entertainment is not the main reason for children's screen time for entertainment. In addition to 2 coding references of parental screen time for entertainment, parents are involved in childcare, cooking, housework, study, and work when children have screen time for entertainment. Parents' activities indicate that they have limited time and attention for their Y1 children, and screen time for entertainment is used as a tool to attract the Y1 children creating the time for parents to finish other tasks in the family. There is no model for children's screen time in these situations, and determinants at the family level function to create the environment for children's screen time. Ways to reduce children's screen time of this type can be achieved by changes in the determinants at the family level. Children can be invited to participate in childcare, cooking, and housework, instead of being kept out of these activities, and P2 and P7 serve as good examples of engaging Y1 children in cooking and housework. Children's engagement in activities like childcare, cooking, and housework needs a process, and it requires patience from both parents and children.

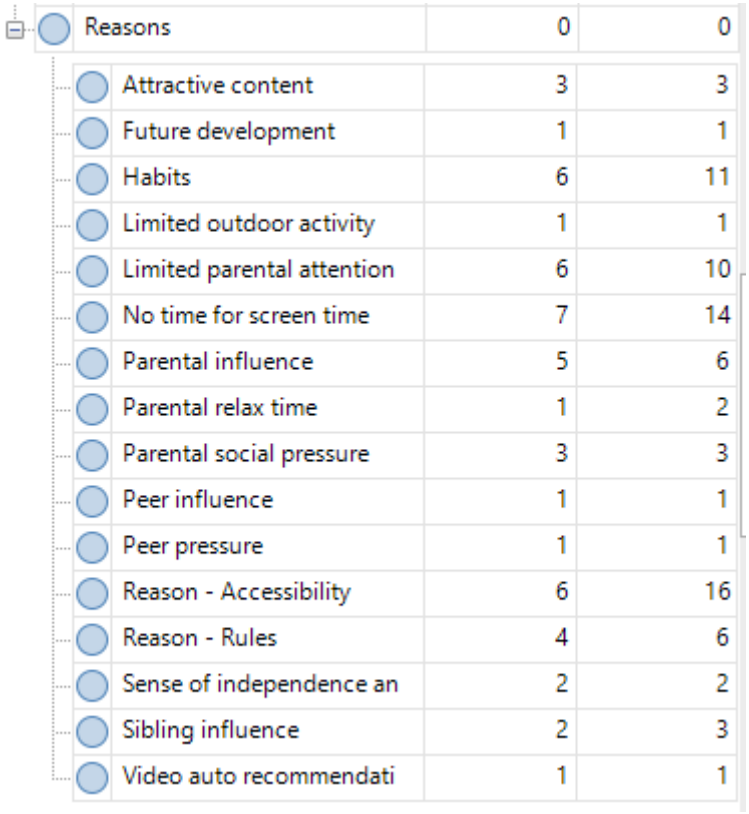
5.5 Reasons for Screen Time

Both parental screen time and their Y1 children's screen time that have been examined in this study take place in the home environment, and parents actually have plans for both

their own and their children's screen time. All participants mentioned the reasons for having or not having screen time at home in the accounts of their experiences.

Figure 5.5

Reasons for Children's Screen Time



Reasons	0	0
Attractive content	3	3
Future development	1	1
Habits	6	11
Limited outdoor activity	1	1
Limited parental attention	6	10
No time for screen time	7	14
Parental influence	5	6
Parental relax time	1	2
Parental social pressure	3	3
Peer influence	1	1
Peer pressure	1	1
Reason - Accessibility	6	16
Reason - Rules	4	6
Sense of independence an	2	2
Sibling influence	2	3
Video auto recommendati	1	1

Figure 5.5 reports the number of coding references of each reason identified in this study. It needs to be clarified that one reason alone is unlikely to predict positive or negative screen time, and several reasons generally function together to determine a person's screen time. The "accessibility" code has the most references in the data, and it means that the participants hold that children are more likely to have screen time when they have access to screen devices at home. When they have no access to screen devices, they surely have less screen time.

The second most frequently coded reason for screen time is "no time for screen time",

which applies both to parents and Y1 children. P1, P2, P5, P6 and P8 all mentioned that they themselves did not have screen time, because they had a tight schedule at home with their Y1 children. P2, P4, P5, and P6 mentioned that their Y1 children did not have time for screen devices, when the children's time was filled with different activities without being idle. This gives rise to the idea that it is reasonable to arrange different activities into children's time without leaving too much time for them to idle.

Limited parental attention and habit also play important roles in children's screen time. When parents could spare no time and attention for their Y1 children, they might resort to children's screen time in order to get the time to finish the tasks that could not be delayed, such as cooking, study, or work. P6 sets a good example in dealing with her limited attention to Y1C6 while she worked. She prepared online extracurricular classes for Y1C6 while she needed to work when Y1C6 was present with her. Although P6 gave Y1C6 screen time, the extracurricular classes delivered online was unlikely to bring about excessive screen time to Y1C6. Habit matters in Y1 children's screen time. When children have formed the habit of having screen time, they would ask for it regularly, and this can be illustrated by P7's experience. If children have developed the habit of not having screen time, they get used to life without it. Y1C4 did not watch TV because P4 removed the TV out of their home, and Y1C4 never bothered with asking for TV time. Therefore, it is worthwhile to develop a good screen habit for Y1 children, and parents need to take some effort to find suitable activities for their children when they have limited time and attention.

5.6 Measures to Control Screen Time

Data collected in this study show that all parents have a reasonable amount of screen time at home with the presence of their Y1 children. Some have very limited screen time in

cases of P1, P5, P6, and P8, and some have a comparatively longer screen time at home because they work or study on screen devices. No participant has irrationally long screen time for entertainment. However, they all mentioned the measures to control children's screen time, such as time control, accessibility, setting a rule, distraction, and dictating.

Time control and accessibility are the most frequently referenced measures in this study. P1 provides a good example in controlling children's screen time. P1's husband assigned an account for Y1C1 to use to log on screen devices, and the settings in his account only allowed him to use the screen devices at a certain time for a fixed duration. When time was up, Y1C1 no longer had access to the screen device, and he rarely complained. The other equally frequently referenced measure is the accessibility of screen devices. No participant bought screen devices for their Y1 children, and they all acknowledged that the children's screen time was better monitored and arranged when children had no screen devices of their own.

Having a rule is an effective way to control children's screen time. P6 mentioned that the child would have unlimited screen time if there was no rule for that. P8 noticed that the rule effectively reduced the protests from children when it was time to turn off the devices. In order to move smoothly from screen time to the next stage, parents usually need to skillfully distract the children with activities children are interested in. It is justified to say that one measure alone cannot do the whole job, and several measures usually work together to effectively control children's screen time within reasonable scope.

Chapter 6: Discussion

Parents' experience of screen time at home consists of what they do in their screen time and the contexts in which they have their screen time. Parental screen time is related to what they do on screen devices, the amount of work they have at home, and their Y1 children's activities at home. Y1 children's screen time is inevitably discussed in parents' accounts of their own screen time at home. Parental and children's screen time can be roughly categorized into work/study and entertainment. Work and study are usually considered compulsory and there are few complaints about the screen time spent on work or study. The screen time spent on entertainment is problematic, and is what should be controlled and reduced in dealing with children's excessive screen time.

6.1 Discussion of the Findings

This study contributes to the literature on parental screen time in two ways. First, parents have screen time at home roughly for two different purposes, work/study and entertainment, but parental screen time was discussed indiscriminately in previous studies (Asplund et al., 2015; Carson, Stearns and Janssen, 2015). Children's screen time is related to the two types of parental screen time in different ways, so parental screen time for different purposes needs to be identified in studies on screen time. Second, the findings in this study show that parental screen time for entertainment at home is kept at a minimal level, but children's screen time in this study is not influenced much by parental screen time for entertainment. This finding is inconsistent with findings in the literature claiming that children's screen time is positively correlated with parental TV time (Goncalves et al., 2019). It can be argued that parental screen time for entertainment is not the main reason leading to children's screen time in cases where parents have little screen time for entertainment. Other

factors, in addition to parental screen time, should be explored in order to deal with children's increased screen time.

Children have screen time for two purposes, study and entertainment. The different purposes were not distinguished in previous studies, and children's screen time for study has never appeared in the literature. However, screen time for study has become a new mode of study due to the school closure in the pandemic. Parents do not have much concern about children's screen time for study, although two participants experienced more than 2 hours of screen time for study in their children. Children's screen time for entertainment causes parents' concerns (Vizcaino et al., 2020), and is expected to be limited.

This study contributes to the literature on the reasons for children's screen time. Children's screen time for entertainment is likely to occur during parental screen time for entertainment, and this is consistent with the findings in previous studies (Goncalves et al., 2019; Totland et al., 2013). In addition, children's screen time also occurs when parents have limited attention or time for them, such as when parents are engaged in cooking or other chores. Limited parental attention/time is the reason for children's screen time for entertainment that emerged in this study.

6.2 Implications of the Study

This phenomenological study reveals what screen time is really like in the home environment, and brings to attention some questions that have been neglected or taken for granted. The findings of this study have implications both for research and for practice.

Based on the findings of this study, the following issues should be taken into consideration in future research. First, a distinction should be made between different purposes of screen time. Both parents and children have screen time for different purposes,

which should be distinguished in research, because parental screen time for different purposes is connected with children's screen time in different ways and children's screen time for different purposes is caused by different factors. Modifications of different types of screen time can be realized through different ways. Therefore, different purposes of screen time should be identified and distinguished in research on both parental and children's screen time. Second, children's screen time for study needs to be explored. This type of screen time increased significantly during the pandemic, but little is known about its effects on children's wellbeing and how it differs from screen time for entertainment. Studies are expected to reveal more information on its effects on children and potential ways to minimize its detrimental effects if it is unavoidable. Third, the relationship between limited parental attention/time and children's screen time for entertainment should be justified through further research. This study shows that a frequently-mentioned occasion when children have screen time for entertainment is when parents have limited attention or time for them. It needs to be studied in future research whether there is a significant correlation between the two factors or not.

This study has the potential to inform practices in early childhood education. In the first place, education of parents on the effects of screen time should be carried out. Data collected in this study show that parents are not fully aware of the effects of excessive screen time on children's well-being. All participants agreed that excessive screen time was harmful for children. Contrasted with the many detrimental effects of excessive screen time in children discussed in section 2.1, participants' major concern was children's eyesight. Only P5 mentioned that excessive screen time was negatively related to children's cognitive development. P3 mentioned the relation between excessive screen time and academic

achievement and screen addiction. P8 mentioned the correlation between screen content and aggressive behaviours. The results imply that parents need to have a better understanding of the effects of screen time on children in order to give informed guidance when faced with screen time issues. Comprehensive knowledge of the effects of excessive screen time would help to raise awareness of the importance of limiting children's screen time.

Second, more activities should be developed for occasions when children's attention should be held for a long time. Results of this study show that parents need to make arrangement for their children when they work or study on screen devices at home. If there is no other caregiver at home, parents need to prepare activities that could hold their children's attention for a long time in order for parents to finish their job or study. Participants mentioned in this study that they did not have many options in this situation, and children usually lost interest in their activities after a short period. The result is that parents give their children screen time for entertainment while they work or study. It is expected that professionals in early childhood education and parents develop more activities or programs for children to get involved in independently over a couple of hours.

Finally, solutions need to be worked out to deal with situations when parents have limited attention or time for their children when they are engaged in cooking and other chores at home. Participants mentioned that they were likely to give their children screen time for entertainment in such cases. Children's involvement in housework should be encouraged, but guidance should be provided for parents, such as recommended housework for children, information on children's development of motor skills, etc., so that parents could adjust expectations of children's performance when involving children in housework. Without effective communication of knowledge on children's development and appropriate

activities for children, parents might have expectations beyond children's ability, which might discourage children's engagement in housework. Hence, knowledge on children's development and recommended housework suitable for children should be communicated effectively to parents.

6.3 Strengths and Limitations of This Study

This study is a rigorous one. It focuses on an important topic in early childhood education (Sigman, 2012), and the findings reveal what type of parental screen behaviour is closely connected with children's screen time and in what situations parents give their children screen time. The sample size is appropriate for this qualitative research. Parents of Y1 students were recruited as participants who provided clear descriptions of their screen time experiences at home. Sincerity is achieved through transparency about the research methods (Tracy, 2010). Thick descriptions of parental screen time experiences were presented in the thesis in the form of quotations or interpretations in the results and discussion of the research topic. Procedural ethics were considered before the start of the research. The findings of this study have practical implications for parents and professionals in the field of early childhood education. The qualitative approach employed in this study broadens the scope of knowledge concerning the relationships between parental and children's screen time at home.

This study examines the relationship between parental and children's screen time using a qualitative approach, revealing whether children's screen time is related to parental screen time or whether certain types of parental screen behaviours are related to children's screen time. Research findings shed light on ways to deal with children's increased screen time. The significance of this study can be discussed from the methodological and practical aspects.

Methodologically, a qualitative approach is employed and it enables this study to produce rich and in-depth information of the research topic. A review of the literature shows that most of current studies on parental screen time have employed quantitative approach aiming to test the hypothesis that parental screen time is positively correlated with children's screen time (Birken et al., 2011). The solution provided in the quantitative studies to children's increased screen time and problems caused by it seems too simplistic by suggesting a reduction of parents' screen time (Xu et al., 2015). Screen devices mainly referred to TVs several decades ago, but include TVs, computers, smart phones and tablets now. Parents use screen devices for different purposes, such as for entertainment like games and online interactions with friends, for work, for communication, etc. There is an essential difference between parents' playing games and reading using screen devices, and a qualitative study reveals in what contexts parents have screen time with a clear description of the screen time types. Information of Y1 children's activities is provided in the accounts of contexts, and it can be easily figured out how children's screen time is connected with parental screen time at home. In this way, a qualitative study produces detailed information on the relationships between parental and children's screen time, and effective measures can be worked out to deal with children's increased screen time based on findings of this research. Compared with the quantitative approach, the qualitative approach is insightful in the question under investigation. In addition, the qualitative data analysis tool, NVivo, was employed to do the data analysis. The data were easily analyzed and coded, and the results were visually illustrated in NVivo.

This study has practical significance. The quantitative studies generate indiscriminate solutions to increased screen time in children, that is, reducing parents' screen time (Xu et al.,

2015). This solution worked several decades ago when TVs were the only screen device at home. Nowadays, computers and smartphones are integrated into people's daily life and removal of them from daily life or simply reducing the use of them would bring unexpected inconvenience or be impractical in some cases. This this qualitative study provides information on how parental screen time for different purposes is related to children's screen time. If parental screen time for a specific purpose is obviously connected with children's increased screen time, changes should be made in the corresponding type of parental screen time. If no relationship appears between parental screen time for a certain purpose and children's screen time, parents can keep that type of screen time at home. In this way, parents' benefits are considered and protected to the largest extent. With the findings in a qualitative study, parents, teachers, and even pediatricians could provide more effective and practical solutions when faced with problems related to increased screen time in children. Implications for practice show that endeavor should be made to educate parents on the effects of excessive screen time, knowledge about children's development, appropriate activities for children to do, etc.

Limitations of this study mainly come from the sampling procedure. Participants in this study were recruited through volunteer recruitment advertisement on the social media of Facebook and WeChat, and they were located in different countries. At the time of the interviews, all participants experienced the pandemic in their living locations, but the COVID restrictions and regulations differed considerably. Therefore, participants' work, study, life, and children's school and study were affected to different extent. Children's online school was organized in significantly different ways. It is hard to predict how much the diversity of participants' background affected the results of this study.

6.4 Concluding Remarks

For parents of Y1 children, their screen time at home with Y1 children's presence is kept at the minimal level. If parents work or study on screen devices when their Y1 children are at home, their screen time is usually mandatory, and they must work or study at a fixed time or to meet deadlines. In this case, parents must make arrangements for their Y1 children so that they can focus on their work or study without being interrupted. If there is another caregiver at home, the Y1 children are left to the other caregiver. If no other caregivers are at home, the first choice is to engage Y1 children in independent plays with toys, artworks, or craft works. The activities prepared for Y1 children are required to hold Y1 children's attention for a long period of time. If these independent activities fail, parents' next choice is screen time, usually for the purpose of entertainment.

Parents have very limited screen time for entertainment when their Y1 children are at home. If parent do not work or study at home, they still have a lot of work such as activities with Y1 children, cooking, and chores. In families where parents have some spare time after work/study, cooking and chores, they have family screen time when parents and Y1 children take the opportunity to spend the time together. It is actually a family time for parents and children to communicate. Parental screen time for entertainment on other occasions usually attracts their Y1 children, who will come up to have a look at their parents' screen. Although Y1 children only stay for a short while with parents watching the screens, parental screen time for entertainment is a factor that increases Y1 children's screen time for entertainment. Rules and habits matter in this case. If parents have rules against Y1 children's participation in parental screen time for entertainment, the rules work in most cases. Considering Y1 children's reaction to parental screen time for entertainment, most parents purposefully avoid

screen time for entertainment in front of Y1 children.

Y1 children's screen time at home always occurs with their parents' presence and permission. Children's screen time is categorized into study and entertainment. In some cases, their screen time for study is online school caused by the pandemic. Neither parents nor Y1 children complain about this type of screen time, no matter how long it is. Parents use Y1 children's screen time for online school to finish cooking and chores, and sometimes they need to supervise Y1 children during their online study. In some cases, Y1 children's screen time for study is online extracurricular classes. Some parents choose these classes as an option for children's activities, and some parents fill these online classes into the time when they work or study online.

Y1 children's screen time for entertainment is spent on cartoons or games, and this is the part that parents and other professionals intend to reduce. Some Y1 children have taken a certain length of screen time for entertainment as a daily routine, and some not. It occurs at different time, during parents' work or study, when parents have limited attention for them during cooking or other chores. Therefore, Y1 children's screen time for entertainment does not always co-occur with parental screen time, but it occurs when parents have limited attentions for them, to be exact. If parents and other professionals intend to reduce Y1 children's screen time, this is what they should work on. Activities that can hold Y1 children's attention and housework children can get involved in together with their parents while parents have limited attention are what can be used as substitute for children's screen time for entertainment.

References

Akçay, D., & Akçay, B. D. (2019). Effect of media content and media use habits on aggressive behaviors in the adolescents. *The European Research Journal, 5*(3), 433-439. doi:10.18621/eurj.395892

Asplund, K. M., Kair, L. R., Arain, Y. H., Cervantes, M., Oreskovic, N. M., & Zuckerman, K. E. (2015). Early childhood screen time and parental attitudes toward child television viewing in a low-income Latino population attending the special supplemental nutrition program for women, infants, and children. *Childhood Obesity, 11*(5), 590. https://doi.org/10.1089/chi.2015.0001

Atkin, A. J., Sharp, S. J., Corder, K., & van Sluijs, E. M. F. (2014). Prevalence and correlates of screen time in youth. *American Journal of Preventive Medicine, 47*(6), 803-807.

Bandura, A. (1977). *Social learning theory*. Prentice-Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W.H. Freeman.

Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review, 3*(3), 193-209.

Bandura, A. (2001). Social cognitive theory of mass communication. *Media Psychology, 3*(3), 265-299.

Baranowski, T., Anderson, C., & Carmack, C. (1998). Mediating variable framework in physical activity interventions: How are we doing? How might we do better? *American Journal of Preventive Medicine, 15*(4), 266-297.

Barr-Anderson, D. J., Fulkerson, J. A., Smyth, M., Himes, J. H., Hannan, P. J., Holy Rock, B., & Story, M. (2011). Associations of American Indian children's screen-time behavior with parental television behavior, parental perceptions of children's screen

time, and media-related resources in the home. *Preventing Chronic Disease, 8*(5), A105.

Barroso, C. S., Springer, A. E., Ledingham, C. M., & Kelder, S. H. (2020). A qualitative analysis of the social and cultural contexts that shape screen time use in Latino families living on the U.S.-mexico border. *International Journal of Qualitative Studies on Health and Well-being, 15*(1), 1735766-1735766. doi:10.1080/17482631.2020.1735766

Birken, C. S., Maguire, J., Mekky, M., Manlhiot, C., Beck, C. E., Jacobson, S., Peer, M., Taylor, C., McCrindle, B. W., Parkin, P. C., & TARGet Kids! collaboration. (2011). Parental factors associated with screen time in pre-school children in primary-care practice: A TARGet kids! study. *Public Health Nutrition, 14*(12), 2134-2138.

Bjelland, M., Soenens, B., Bere, E., Kovacs, E., Lien, N., Maes, L., Manios, Y., Moschonis, G., & te Velde, S. J. (2015). Associations between parental rules, style of communication and children's screen time. *BMC Public Health, 15*, 1002.

Blaise, M. (2010). "Designing to scale: When size matters." In G. Mac Naughton, S. A. Rolfe & I. Siraj-Blatchford (Eds.), *Doing early childhood research: International perspectives on theory & practice*, (2nd ed., pp. 209-219). Open University Press.

Bleakley, A., Jordan, A. B., & Hennessy, M. (2013). The relationship between parents' and children's television viewing. *Pediatrics, 132*(2), e364-e371.

Bochner, A, P. (2000). Criteria against ourselves. *Qualitative Inquiry, 6*(2), 266-272.

Brindova, D., Veselska, Z. D., Klein, D., Hamrik, Z., Sigmundova, D., van Dijk, J. P., Reijneveld, S. A., & Geckova, A. M. (2015). Is the association between screen-based behaviour and health complaints among adolescents moderated by physical

activity? *International Journal of Public Health, 60*(2), 139-145.

Brinkmann, S. (2013).*Qualitative interviewing*. Oxford University Press.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology, 22*(6), 723-742.

Buchanan, L. R., Rooks-Peck, C. R., Finnie, R. K. C., Wethington, H. R., Jacob, V., Fulton, J. E., Johnson, D. B., Kahwati, L. C., Pratt, C. A., Ramirez, G., Mercer, S. L., Glanz, K., & Community Preventive Services Task Force. (2016). Reducing recreational sedentary screen time. *American Journal of Preventive Medicine, 50*(3), 402-415.

Butterfoss, F. D., Kegler, M. C., & Francisco, V. T. (2008). Mobilizing organizations for health promotion. In K. Glanz, B. K. Rimer & K. Viswanath (Eds.), *Health behaviour and health education: Theory, research and practice* (4th ed., pp. 335-361). Jossey-Bass.

Byeon, H., & Hong, S. (2015). Relationship between television viewing and language delay in toddlers: Evidence from a Korea national cross-sectional survey. *PloS One, 10*(3), e0120663-e0120663.

Canadian Society for Exercise Physiology (CSEP). (2017, November 20). *Canadian 24-hour movement guidelines for the early years (0-4 years): An integration of physical activity, sedentary behaviour, and sleep. CSEP/SCPE* https://csepguidelines.ca/wp-content/themes/csep2017/pdf/PAR7972_24Hour_Guidelines_EY_En-4.pdf

Carnagey, N. L., Anderson, C. A., & Bushman, B. J. (2007). The effect of video game violence on physiological desensitization to real-life violence. *Journal of*

Experimental Social Psychology, 43(3), 489-496.

Carson, V., & Janssen, I. (2012). Associations between factors within the home setting and screen time among children aged 0-5 years: A cross-sectional study. *BMC Public Health, 12*(1), 539-539.

Carson, V., Kuzik, N., Hunter, S., Wiebe, S. A., Spence, J. C., Friedman, A., Tremblay, M. S., Slater, L. G., & Hinkley, T. (2015). Systematic review of sedentary behavior and cognitive development in early childhood. *Preventive Medicine, 78*, 115-122.

Carson, V., Stearns, J., & Janssen, I. (2015). The relationship between parental physical activity and screen time behaviors and the behaviors of their young children. *Pediatric Exercise Science, 27*(3), 390.

Carter, S. M., & Little, M. (2007). Justifying knowledge, justifying method, taking action: Epistemologies, methodologies, and methods in qualitative research. *Qualitative Health Research, 17*(10), 1316-1328.

Chaput, J., Leduc, G., Boyer, C., B́danger, P., LeBlanc, A. G., Borghese, M. M., & Tremblay, M. S. (2014). Electronic screens in children's bedrooms and adiposity, physical activity and sleep: Do the number and type of electronic devices matter? *Canadian Journal of Public Health / Revue Canadienne De Sant éPublique, 105*(4), e273-e279.

Chen, X., Huang, X., Chang, L., Wang, L., & Li, D. (2010). Aggression, social competence, and academic achievement in Chinese children: A 5-year longitudinal study. *Development and Psychopathology, 22*(3), 583-592.

Christakis, D. A. (2009). *The effects of infant media usage: What do we know and what should we learn*. Blackwell Publishing.

Christakis, D. A., & Zimmerman, F. J. (2007). Violent television viewing during preschool is associated with antisocial behavior during school age. *Pediatrics, 120*(5), 993-999.

Christakis, D. A., Zimmerman, F. J., DiGiuseppe, D. L., & McCarty, C. A. (2004). Early television exposure and subsequent attentional problems in children. *Pediatrics, 113*(4), 708-713.

Chwaszcz, J., Lelonek-Kuleta, B., Wiechetek, M., Niewiadomska, I., & Palacz-Chrisidis, A. (2018). Personality traits, strategies for coping with stress and the level of internet Addiction – A study of polish secondary-school students. *International Journal of Environmental Research and Public Health, 15*(5), 987-997. doi:10.3390/ijerph15050987

Conner, M., & Norman, P. (2005). *Predicting health behaviour: Research and practice with social cognition models* (2nd ed.). Open University Press.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Sage Publications.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry & research design: Choosing among five approaches* (Fourth ed.). Sage Publications.

Croft, W., & Cruse, D. A. (2004). *Cognitive linguistics*. Cambridge University Press.

Crosby, R. A., Salazar, L. F., & DiClemente, R. J. (2019). Ecological and structural approaches to improving public health. In R. J. DiClemente, L. F. Salazar & R. A. Crosby (Eds.), *Health behavior theory for public health: Principles, foundations, and applications* (2nd ed., pp. 160-179). Jones & Bartlett Learning.

Crouch, M., & McKenzie, H. (2006). The logic of small samples in interview-based qualitative research. *Social Science Information, 45*(4), 483-499.

D'Angelo, J. D., & Moreno, M. A. (2019). Not at the dinner table - take it to your room: Adolescent reports of parental screen time rules. *Communication Research Reports, 36*(5), 426-436. doi:10.1080/08824096.2019.1683528

Davison, K. K., & Birch, L. L. (2001). Childhood overweight: A contextual model and recommendations for future research. *Obesity Reviews, 2*(3), 159-171.

Davison, K. K., Francis, L. A., & Birch, L. L. (2005). Links between parents' and girls' television viewing behaviors: A longitudinal examination. *The Journal of Pediatrics, 147*(4), 436-442.

Dietze, B., & Kashin, D. (2012). *Playing and learning in early childhood education*. Pearson Canada.

Domingues-Montanari, S. (2017). Clinical and psychological effects of excessive screen time on children: Effects of screen time on children. *Journal of Pediatrics and Child Health, 53*(4), 333-338.

Duncan, M. J., Vandelanotte, C., Caperchione, C., Hanley, C., & Mummery, W. K. (2012). Temporal trends in and relationships between screen time, physical activity, overweight and obesity. *BMC Public Health, 12*, 1060.

Dworkin, S. L. (2012). Sample size policy for qualitative studies using in-depth interviews. *Archives of Sexual Behavior, 41*(6), 1319-1320.

Edelson, L. R., Mathias, K. C., Fulgoni III.,V. L., & Karagounis, L. G. (2016). Screen-based sedentary behavior and associations with functional strength in 6-15 year-old children in the United States. *BMC Public Health, 16*(1), 116.

Entwisle, D., Alexander, K., & Olson, L. (2005). First grade and educational attainment by age 22: A new story. *American Journal of Sociology, 110*(5), 1458-1502.

Falbe, J., Rosner, B., Willett, W., Sonneville, K., Hu, F., & Field, A. (2013). Adiposity and different types of screen time. *Pediatrics, 132*(6), E1497-E1505.

Fang, K., Mu, M., Liu, K., & He, Y. (2019). Screen time and childhood overweight/obesity: A systematic review and meta-analysis. *Child Care, Health & Development, 45*(5), 744-753. doi:10.1111/cch.12701

Faught, E. L., Qian, W., Carson, V. L., Storey, K. E., Faulkner, G., Veugelers, P. J., & Leatherdale, S. T. (2019). The longitudinal impact of diet, physical activity, sleep, and screen time on Canadian adolescents' academic achievement: An analysis from the COMPASS study. *Preventive Medicine, 125*, 24-31.

Fedewa, A. L., & Ahn, S. (2011). The effects of physical activity and physical fitness on children's achievement and cognitive outcomes: A meta-analysis. *Research Quarterly for Exercise and Sport, 82*(3), 521-535.

Ferguson, H. (2006). *Phenomenological sociology: Experience and insight in modern society*. Sage Publications.

Finnegan Jr., J. R., & Viswanath, K. (2008). Communication theory and health behaviour change. In K. Glanz, B. K. Rimer & K. Viswanath (Eds.), *Health behaviour and health education: Theory, research and practice* (4th ed., pp. 363-387). Jossey-Bass.

Fitzpatrick, C., Barnett, T., & Pagani, L. (2012). Early exposure to media violence and later child adjustment. *Journal of Developmental and Behavioral Pediatrics, 33*(4), 291-297.

Gentile, D. A., Anderson, C. A., Yukawa, S., Ihori, N., Saleem, M., Ming, L. K., Shibuya, A., Liau, A. K., Khoo, A., Bushman, B. J., Huesmann, L. R., & Sakamoto, A. (2009). The effects of prosocial video games on prosocial behaviors: International evidence

from correlational, longitudinal, and experimental studies. *Personality and Social Psychology Bulletin, 35*(6), 752-763.

Gibson, J., Cornell, M., & Gill, T. (2017). A systematic review of research into the impact of loose parts play on children's cognitive, social and emotional development. *School Mental Health, 9*(4), 295-309.

Giles-Corti, B., Timperio, A., Bull, F., & Pikora, T. (2005). Understanding physical activity environmental correlates: Increased specificity for ecological models. *Exercise and Sport Sciences Reviews, 33*(4), 175-181.

Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: Interviews and focus groups. *British Dental Journal, 204*(6), 291-295. https://doi.org/10.1038/bdj.2008.192

Golan, M., & Weizman, A. (2001). Familial approach to the treatment of childhood obesity: Conceptual model. *Journal of Nutrition Education, 33*(2), 102.

Golan, M., Fainaru, M., & Weizman, A. (1998). Role of behaviour modification in the treatment of childhood obesity with the parents as the exclusive agents of change. *International Journal of Obesity, 22*(12), 1217-1224.

Goncalves, W. S. F., Byrne, R., Viana, M. T., & Trost, S. G. (2019). Parental influences on screen time and weight status among preschool children from Brazil: A cross-sectional study. *The International Journal of Behavioral Nutrition and Physical Activity, 16*(1), 27-27. doi:10.1186/s12966-019-0788-3

Gorely, T., Marshall, S. J., & Biddle, S. J. H. (2004). Couch kids: Correlates of television viewing among youth. *International Journal of Behavioral Medicine, 11*(3), 152-163.

Gortmaker, S. L., Peterson, K., Wiecha, J., Sobol, A. M., Dixit, S., Fox, M. K., & Laird, N.

(1999). Reducing obesity via a school-based interdisciplinary intervention among youth: Planet health. *Archives of Pediatrics & Adolescent Medicine, 153*(4), 409-418.

Grusec, J. E. (1992). Social learning theory and developmental psychology: The legacies of Robert Sears and Albert Bandura. *Developmental Psychology, 28*(5), 776-786.

Guerrero, M. D., Barnes, J. D., Chaput, J., & Tremblay, M. S. (2019). Screen time and problem behaviors in children: Exploring the mediating role of sleep duration. *The International Journal of Behavioral Nutrition and Physical Activity, 16*(1), 105-114.

Hendry, R. S. (2017). *Investigating relationships between screen time and young children's social emotional development* [Unpublished master's thesis]. The University of British Columbia.

Hinkley, T., Salmon, J., Okely, A. D., Crawford, D., & Hesketh, K. (2012). Preschoolers' physical activity, screen time, and compliance with recommendations. *Medicine and Science in Sports and Exercise, 44*(3), 458-465.

Howie, E. K., Joosten, J., Harris, C. J., & Straker, L. M. (2020). Associations between meeting sleep, physical activity or screen time behaviour guidelines and academic performance in Australian school children. *BMC Public Health, 20*(1), 520-520. doi:10.1186/s12889-020-08620-w

Hu, B. Y., Johnson, G. K., Teo, T., & Wu, Z. (2020). Relationship between screen time and Chinese children's cognitive and social development. *Journal of Research in Childhood Education, 34*(2), 183-207. doi:10.1080/02568543.2019.1702600

Lagercrantz, H. (2016). Connecting the brain of the child from synapses to screen-based activity. *Acta Paediatrica, 105*(4), 352-357.

Lanningham-Foster, L., Jensen, T. B., Foster, R. C., Redmond, A. B., Walker, B. A., Heinz,

D., & Levine, J. A. (2006). Energy expenditure of sedentary screen time compared with active screen time for children. *Pediatrics, 118*(6), e1831-e1835.

Lauricella, A. R., Wartella, E., & Rideout, V. J. (2015). Young children's screen time: The complex role of parent and child factors. *Journal of Applied Developmental Psychology, 36*, 11-17.

Lee, S., Bartolic, S., & Vandewater, E. A. (2009). Predicting children's media use in the USA: Differences in cross-sectional and longitudinal analysis. *The British Journal of Developmental Psychology, 27*(Pt 1), 123-143.

Li, M., Xue, H., Wang, W., & Wang, Y. (2017). Parental expectations and child screen and academic sedentary behaviors in china. *American Journal of Preventive Medicine, 52*(5), 680-689.

Lin, Y., Kuo, S., Chang, Y., Lin, P., Lin, Y., Lee, P., Lin, P., & Chen, S. (2020). Effects of parental education on screen time, sleep disturbances, and psychosocial adaptation among Asian preschoolers: A randomized controlled study. *Journal of Pediatric Nursing,* 56, e27-e34. doi:10.1016/j.pedn.2020.07.003

Linebarger, D. L., & Walker, D. (2005). Infants' and toddlers' television viewing and language outcomes. *American Behavioral Scientist, 48*(5), 624-645.

Lipnowski, S., Leblanc, C. M., & Canadian Paediatric Society, Healthy Active Living and Sports Medicine Committee. (2012). Healthy active living: Physical activity guidelines for children and adolescents. *Pediatrics & Child Health, 17*(4), 209.

Määttä, S., Kaukonen, R., Vepsäläinen, H., Lehto, E., Ylönen, A., Ray, C., Erkkola, M., & Roos, E. (2017). The mediating role of the home environment in relation to parental educational level and preschool children's screen time: A cross-sectional study. *BMC*

Public Health, 17(1), 1-11.

MacGowan, T. L., & Schmidt, L. A. (2021). Preschoolers' social cognitive development in the age of screen time ubiquity. *Cyberpsychology, Behavior and Social Networking, 24*(2), 141-144. doi:10.1089/cyber.2020.0093

Madigan, S., McArthur, B. A., Anhorn, C., Eirich, R., & Christakis, D. A. (2020). Associations between screen use and child language skills: A systematic review and meta-analysis. *JAMA Pediatrics, 174*(7), 665. doi:10.1001/jamapediatrics.2020.0327

Manganello, J. A., & Taylor, C. A. (2009). Television exposure as a risk factor for aggressive behavior among 3-year-old children. *Archives of Pediatrics & Adolescent Medicine, 163*(11), 1037-1045.

Marshall, M. N. (1996). Sampling for qualitative research. *Family Practice, 13*(6), 522-526.

Marshall, S. J., Biddle, S. J. H., Gorely, T., Cameron, N., & Murdey, I. (2004). Relationships between media use, body fatness and physical activity in children and youth: A meta-analysis. *International Journal of Obesity, 28*(10), 1238-1246.

McAlister, A. L., Perry, C. L., & Parcel, G. S. (2008). How individuals, environments, and health behaviors interact: Social cognitive theory. In K. Glanz, B. K. Rimer & K. Viswanath (Eds.), *Health behaviour and health education: Theory, research and practice* (4th ed., pp. 169-188). Jossey-Bass.

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly*, *15*(4), 351-377. https://doi.org/10.1177/109019818801500401

Minkler, M., Wallerstein, N., & Wilson, N. (2008). Improving health through community organization and community building. In K. Glanz, B. K. Rimer & K. Viswanath

(Eds.), *Health behaviour and health education: Theory, research and practice* (4th ed., pp. 287-312). Jossey-Bass.

Mistry, K. B., Minkovitz, C. S., Strobino, D. M., & Borzekowski, D. L. G. (2007). Children's television exposure and behavioral and social outcomes at 5.5 years: Does timing of exposure matter? *Pediatrics, 120*(4), 762-769.

Moran, D. (2000). *Introduction to phenomenology* (1st ed.). Routledge.

Moustakas, C. (1994). *Phenomenological research methods*. Sage Publications.

O'Keeffe, G. S., Clarke-Pearson, K., & Council on Communications and Media. (2011). The impact of social media on children, adolescents, and families. *Pediatrics, 127*(4), 800-804.

Olstad, D., & McCargar, L. (2009). Prevention of overweight and obesity in children under the age of 6 years. *Applied Physiology Nutrition and Metabolism, 34*(4), 551-570.

Owen, N., Sugiyama, T., Eakin, E. E., Gardiner, P. A., Tremblay, M. S., & Sallis, J. F. (2011). Adults' sedentary behavior determinants and interventions. *American Journal of Preventive Medicine, 41*(2), 189-196.

Özmert, E., Toyran, M., & Yurdakök, K. (2002). Behavioral correlates of television viewing in primary school children evaluated by the child behavior checklist. *Archives of Pediatrics & Adolescent Medicine, 156*(9), 910-914.

Pagani, L. S., Fitzpatrick, C., & Barnett, T. A. (2013). Early childhood television viewing and kindergarten entry readiness. *Pediatric Research, 74*(3), 350-355.

Pagani, L. S., Fitzpatrick, C., Barnett, T. A., & Dubow, E. (2010). Prospective associations between early childhood television exposure and academic, psychosocial, and physical well-being by middle childhood. *Archives of Pediatrics & Adolescent*

Medicine, 164(5), 425-431.

Page, A. S., Cooper, A. R., Griew, P., & Jago, R. (2010). Children's screen viewing is related to psychological difficulties irrespective of physical activity. *Pediatrics, 126*(5), e1011-e1017.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research, 42*(5), 533-544. doi:10.1007/s10488-013-0528-y

Palumbo, F. M., & Dietz, W. H. (1985). Children's television: Its effects on nutrition and cognitive development. *Pediatric Annals, 14*(12), 793, 796.

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Sage Publications.

Pearson, N., & Biddle, S. J. H. (2011). Sedentary behavior and dietary intake in children, adolescents, and adults: A systematic review. *American Journal of Preventive Medicine, 41*(2), 178-188.

Prentice-Dunn, H., & Prentice-Dunn, S. (2012). Physical activity, sedentary behavior, and childhood obesity: A review of cross-sectional studies. *Psychology, Health & Medicine, 17*(3), 255-273.

Pyper, E., Harrington, D., & Manson, H. (2016). The impact of different types of parental support behaviours on child physical activity, healthy eating, and screen time: A cross-sectional study. *BMC Public Health, 16*(1), 568-568. doi:10.1186/s12889-016-3245-0

Radesky, J. S., & Christakis, D. A. (2016). Increased screen time: Implications for early

childhood development and behavior. *Pediatric Clinics of North America, 63*(5), 827-839.

Ramirez, E. R., Norman, G. J., Rosenberg, D. E., Kerr, J., Saelens, B. E., Durant, N., & Sallis, J. F. (2011). Adolescent screen time and rules to limit screen time in the home. *Journal of Adolescent Health, 48*(4), 379-385.

Rhee, K. (2008). Childhood overweight and the relationship between parent behaviors, parenting style, and family functioning. *The Annals of the American Academy of Political and Social Science, 615*(1), 12-37.

Ritchie, J., Lewis, J., & Elam, G. (2003). Designing and selecting samples. In J. Ritchie & J. Lewis (Eds.), *Qualitative research practice: A guide for social science students and researchers* (pp. 77-108). Sage Publications.

Robinson, T. N. (1999). Reducing children's television viewing to prevent obesity: A randomized controlled trial. *Jama, 282*(16), 1561-1567.

Robinson, T. N., Wilde, M. L., Navracruz, L. C., Haydel, K. F., & Varady, A. (2001). Effects of reducing children's television and video game use on aggressive behavior: A randomized controlled trial. *Archives of Pediatrics & Adolescent Medicine, 155*(1), 17-23.

Saelens, B. E., Sallis, J. F., Nader, P. R., Broyles, S. L., Berry, C. C., & Taras, H. L. (2002). Home environmental influences on children's television watching from early to middle childhood. *Journal of Developmental and Behavioral Pediatrics: JDBP, 23*(3), 127.

Salazar, L. F. Crosby, R. A., & DiClemente, R. J. (2019). Health behavior in the context of the "new" public health. In R. J. DiClemente, L. F. Salazar & R. A. Crosby (Eds.),

Health behavior theory for public health: Principles, foundations, and applications (2nd ed., pp. 3-24). Jones & Bartlett Learning.

Sallis, J. F., Owen, N., & Fisher, E. B. (2008). Ecological models of health behaviour. In K. Glanz, B. K. Rimer & K. Viswanath (Eds.), *Health behaviour and health education: Theory, research and practice* (4th ed., pp. 465-485). Jossey-Bass.

Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports and Exercise, 32*(5), 963-975.

Salmon, J., Timperio, A., Telford, A., Carver, A., & Crawford, D. (2005). Association of family environment with children's television viewing and with low level of physical activity. *Obesity Research, 13*(11), 1939-1951.

Saquib, J. (2018). Social ecological model as a framework for understanding screen time and sedentary behavior among Arab adolescents. *International Journal of Health Sciences, 12*(3), 1-2.

Saunders, T. J., & Vallance, J. K. (2017). Screen time and health indicators among children and youth: Current evidence, limitations and future directions. *Applied Health Economics and Health Policy, 15*(3), 323-331.

Schunk, D. H. (1987). Peer models and children's behavioral change. *Review of Educational Research, 57*(2), 149-174.

Schwimmer, J. B., Burwinkle, T. M., & Varni, J. W. (2003). Health-related quality of life of severely obese children and adolescents. *Jama, 289*(14), 1813-1819.

Sigman, A. (2012). Time for a view on screen time. *Archives of Disease in Childhood, 97*(11), 935-942.

Sparkes, A., & Smith, B. (2014). *Qualitative research methods in sport, exercise and health: From process to product*. Routledge.

Spinelli, E. (2005). *The interpreted world: An introduction to phenomenological psychology* (2nd ed.). Sage Publications.

Stearns, J. A., Carson, V., Spence, J. C., Faulkner, G., & Leatherdale, S. T. (2017). The role of peer victimization in the physical activity and screen time of adolescents: A cross-sectional study. *BMC Pediatrics, 17*(1), 170-11.

Steinberg, L., & Monahan, K. C. (2007). Age differences in resistance to peer influence. *Developmental Psychology, 43*(6), 1531-1543.

Stokols, D. (1992). Establishing and maintaining healthy environments: Toward a social ecology of health promotion. *American Psychologist, 47*(1), 6-22.

Stokols, D. (1996). Translating social ecological theory into guidelines for community health promotion. *American Journal of Health Promotion, 10*(4), 282-298.

Shah, S. M. H., & Saleem, S. (2015). Level of attention of secondary school students and its relationship with their academic achievement. *Journal of Arts and Humanities, 4*(5), 92-106.

Tandon, P. S., Zhou, C., Lozano, P., & Christakis, D. A. (2011). Preschoolers' total daily screen time at home and by type of child care. *Journal of Pediatrics, the, 158*(2), 297-300.

Tandon, P. S., Zhou, C., Sallis, J. F., Cain, K. L., Frank, L. D., & Saelens, B. E. (2012). Home environment relationships with children's physical activity, sedentary time, and screen time by socioeconomic status. *International Journal of Behavioral Nutrition and Physical Activity, 9*, 88-96. doi:10.1186/1479-5868-9-88

Thakkar, R. R., Garrison, M. M., & Christakis, D. A. (2006). A systematic review for the effects of television viewing by infants and preschoolers. *Pediatrics, 118*(5), 2025-2031.

Totland, T. H., Bjelland, M., Lien, N., Bergh, I. H., Gebremariam, M. K., Grydeland, M., Ommundsen, Y., & Andersen, L. F. (2013). Adolescents' prospective screen time by gender and parental education, the mediation of parental influences. *The International Journal of Behavioral Nutrition and Physical Activity, 10*(1), 89-89.

Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative Inquiry, 16*(10), 837-851. https://doi.org/10.1177/1077800410383121

Twarog, J. P., Politis, M. D., Woods, E. L., Boles, M. K., & Daniel, L. M. (2015). Daily television viewing time and associated risk of obesity among U.S. preschool aged children: An analysis of NHANES 2009–2012. *Obesity Research & Clinical Practice, 9*(6), 636-638.

United Nations Office of the High Commissioner for Human Rights. (1990). *Convention on the rights of the child*. http://www.ohchr.org/EN/ProfessionalInterest/Pages/CRC.aspx

Van Manen, M. (2014). *Phenomenology of practice: Meaning-giving methods in phenomenological research and writing*. Left Coast Press. doi:10.4324/9781315422657

Van Zutphen, M., Bell, A. C., Kremer, P. J., & Swinburn, B. A. (2007). Association between the family environment and television viewing in Australian children. *Journal of Paediatrics and Child Health, 43*(6), 458-463.

Vigil, K. B. (2019). *Investigating the relationship between portable screen time and kindergarteners' attention with content as a potential moderator using a non-experimental causal comparative design* (Publication No. 13857414) [Doctoral dissertation, Northcentral University]. ProQuest LLC.

Vizcaino, M., Buman, M., DesRoches, T., & Wharton, C. (2020). From TVs to tablets: The relation between device-specific screen time and health-related behaviors and characteristics. *BMC Public Health, 20*(1), 1-1295. doi:10.1186/s12889-020-09410-0

Wade, L., Smith, J. J., Duncan, M. J., & Lubans, D. R. (2018). Mediators of aggression in a school-based physical activity intervention for low-income adolescent boys. *Mental Health and Physical Activity, 14*, 39-46. doi:10.1016/j.mhpa.2017.12.006

Watt, E., Fitzpatrick, C., Derevensky, J. L., & Pagani, L. S. (2015). Too much television? Prospective associations between early childhood televiewing and later self-reports of victimization by sixth grade classmates. *Journal of Developmental and Behavioral Pediatrics, 36*(6), 426-433.

Wen, L. M., Baur, L. A., Rissel, C., Xu, H., & Simpson, J. M. (2014). Correlates of body mass index and overweight and obesity of children aged 2 years: Findings from the healthy beginnings trial. *Obesity, 22*(7), 1723-1730.

Wood, W., Wong, F. Y., & Chachere, J. G. (1991). Effects of media violence on viewers' aggression in unconstrained social interaction. *Psychological Bulletin, 109*(3), 371-383.

Wright, J. C., Huston, A. C., Murphy, K. C., St Peters, M., PiAon, M., Scantlin, R., & Kotler, J. (2001). The relations of early television viewing to school readiness and vocabulary of children from low-income families: The early window project. *Child*

Development, 72(5), 1347-1366.

Wu, X., Zhang, Z., Zhao, F., Wang, W., Li, Y., Bi, L., Qian, Z., Lu, S., Feng, F., Hu, C., Gong, F., & Sun, Y. (2016). Prevalence of internet addiction and its association with social support and other related factors among adolescents in china. *Journal of Adolescence, 52*, 103-111.

Wunsch, K., Nigg, C., Niessner, C., Schmidt, S. C. E., Oriwol, D., Hanssen-Doose, A., Burchartz, A., Eichsteller, A., Kolb, S., Worth, A., & Woll, A. (2021). The impact of COVID-19 on the interrelation of physical activity, screen time and health-related quality of life in children and adolescents in Germany: Results of the motorik-modul study. *Children (Basel), 8*(2), 98. doi:10.3390/children8020098

Xu, H., Wen, L. M., & Rissel, C. (2015). Associations of parental influences with physical activity and screen time among young children: A systematic review. *Journal of Obesity, 2015*, 546925-23. https://doi.org/10.1155/2015/546925

Yamada, M., Sekine, M., & Tatsuse, T. (2018). Parental internet use and lifestyle factors as correlates of prolonged screen time of children in Japan: Results from the Super Shokuiku School Project. *Journal of Epidemiology, 28*(10), 407-413.

Zhang, G., Wu, L., Zhou, L., Lu, W., & Mao, C. (2016). Television watching and risk of childhood obesity: A meta-analysis. *European Journal of Public Health, 26*(1), 13-18.

Zhao, J., Zhang, Y., Jiang, F., Ip, P., Ho, F. K. W., Zhang, Y., & Huang, H. (2018). Excessive screen time and psychosocial well-being: The mediating role of body mass index, sleep duration, and parent-child interaction. *The Journal of Pediatrics, 202*, 157-162.e1.

Zimmerman, F., & Christakis, D. (2005). Children's television viewing and cognitive

outcomes: A longitudinal analysis of national data. *Archives of Pediatrics & Adolescent Medicine, 159*(7), 619-625.

Appendices

Appendix A: Consent Form

Centre for Early Childhood Education & Research
Vancouver Campus
1100-2125 Main Mall
Vancouver, BC Canada V6T 1Z4

Consent Form

[Relationship between Parental and Children's Screen Time at Home]

I. STUDY TEAM

Principal Investigator: Andreea Cervatiuc, PhD
Senior Instructor
Department of Language and Literacy Education
Faculty of Education
The University of British Columbia
Email: xxxxxxxxxxxxxxxxx@xxxxxx
Contact Number: xxx–xxx–xxxx

Co- Investigator: Yangjin Liu, MA student
Centre for Early Childhood Education and Research
Faculty of Education
The University of British Columbia
Email: xxxxxxxxxx@xxxxxxxxxxxxx
Contact Number: xxx-xxx-xxxx

This research is for the degree of MA in Early Childhood Education and is part of the MA thesis of Yangjin Liu.

II. INVITATION AND STUDY PURPOSE

The purpose of this study is to explore the relationship between parental and children's screen time at home. Screen time means the time spent on screen devices such as TV, computer, smart phone and tablet. We want to find out from parents of students in the first year of schooling what their children are doing when they are using screen devices for different activities at home. Findings from this study will reveal how the screen time of students in the first year of schooling is related to their parents' in the home environment. Insights into this relationship will help solving problems related to children's excessive screen time.

III. STUDY PROCEDURES

If you agree to take part in this research study, you will be interviewed once by graduate student, Yangjin Liu. The interview will take about 1 hour and will take place at a location and time that are convenient to you. You will be shown the Consent Form and asked to sign it at the very beginning of the interview. For interviews conducted during the COVID-19, online interaction only will be used and virtual interviews will be adopted to replace in-person interviews. UBC-licensed version of Zoom will be used to conduct the interview. The meeting link and a password will be sent to you through email before the interview. In order to protect your identity and your personal information, you should log in the meeting using a nickname or a substitute name, and you can turn off your camera during the interview. You may recommend another software as a backup for the interview in case there is difficulty in using the UBC-licensed version of Zoom. You will be asked to sign the Consent Form, scan or take photos of it, and then send it back to the investigators before the interview. With your permission, we will digitally record the interview so that we can concentrate on what you have to say rather than on taking notes. To ensure your privacy and confidentiality, alphanumeric codes will be used in this study, the key to the codes will be kept separately,

away from the data, and only the two investigators will have access to the digitally recorded data.

IV. STUDY RESULTS

The final research findings will be provided for the participants, so that they can be informed of the relationship between parental and children's screen time at home. The results of this study will be reported in a graduate thesis and the main findings may also be published in academic journal articles.

V. POTENTIAL RISKS OF THE STUDY

We do not think there is anything in this study that could harm you or be bad for you. If you feel that any of the questions the interviewer will ask is personal or may upset you, you do not have to answer it if you do not want to. Please let the interviewer know if you have any concerns.

VI. POTENTIAL BENEFITS OF THE STUDY

Taking part in this study, you will have access to the final research findings on the relationship between parental and children's screen time at home. In this case, you can be well-informed of the relationship between parental and children's screen time, and, thus, have more effective measures when dealing with excessive screen time in children.

VII. CONFIDENTIALITY

Your confidentiality will be respected and your identity will be kept strictly private. All documents will be identified by alphanumeric codes and kept in a locked filing cabinet and on a password-protected encrypted computer. The key to the codes will be kept separately away from the data, and only the two researchers of this study have access to them.

Participants will not be identified by name in any reports of the completed study. Results of this study might be published in the future, and the data may be required to be publically available, but no identifying information of the participants will appear in the data or the published articles. Once the data is made publicly available, participants will not be able to withdraw their data. All data, including digital data in a password-protected encrypted U disk and hard copies, will be stored for 5 years in a locked filing cabinet in the Principal Investigator's office. Five years after the completion of the study, the physical data will be shredded and deleted and secure formatting of the U disk will destroy the electronic data.

VIII. REMUNERATION

We will not pay you for the time you take to participate in this study.

IX. CONTACT FOR INFORMATION ABOUT THE STUDY

If you have any questions or concerns about what we are asking of you, please contact Yangjin Liu. The name, telephone number, and email are listed at the top of the first page of this form.

X. CONTACT FOR COMPLAINTS

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, you can contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598

XI. PARTICIPANT CONSENT AND SIGNATURE PAGE

Taking part in this study is entirely up to you. You have the right to refuse to participate in this study. If you decide to take part, you may choose to pull out of the study at any time without giving a reason and without any negative impact on you.

- Your signature below indicates that you have received a copy of this consent form for your own records.
- Your signature indicates that you consent to participate in this study.

_____

Participant Signature Date

_____

Printed Name of the Participant signing above

Ethics ID number (H18-02107)

Appendix B: Recruitment Advertisement

Volunteers Wanted

All my dear friends,

I want volunteers who are parents of students in the first year of schooling (Y1) to participate in my study on the relationship between parental and children's screen time at home.

WHAT WILL BE INVOLVED

You will participate in a one-hour interview sharing your screen time experiences with me.

ABOUT THE STUDY

This study will explore parents' experience of screen time with the presence of Y1 child at home. The result will show whether children's screen time is related to parental screen time at home and whether different types of parental screen behaviours matter in the relationship.

Research Title: The Relationship between Parental and Children's Screen Tim

Principal Investigator:
Andreea Cervatiuc, PhD
Senior Instructor
Department of Language and Literacy Education
Faculty of Education
The University of British Columbia
Email: xxxxxxxxxxxxxxxxx@xxxxxx
Contact Number: xxx–xxx–xxxx

Co- Investigator:
Yangjin Liu, MA student
Centre for Early Childhood Education and Research
Faculty of Education
The University of British Columbia
Email: xxxxxxxxxx@xxxxxxxxxxxxx
Contact Number: xxx-xxx-xxxx

You are welcome to share this news with your friends and acquaintances, and all Y1 parents are welcome to contact me to participate in the study. If you see this advertisement on social media and choose to comment, like or follow it, it means that you will be publicly identified with the study.

If you would be willing to participate, please call xxx-xxx-xxxx or message me on Facebook/WeChat

Thank you!

Appendix C: Interview Schedule

The following questions represent an overarching agenda for the interviews with study participants, who will be asked these questions flexibly during the interaction between the interviewer and the interviewee. The existing questions may be modified, altered, and new ones may be added, as different topics and patterns emerge in the interviews.

INTRODUCTION

1. Can you please tell me a little bit about yourself and your family?
   Please tell me about the family members in your household, their educational background, and other information about the family.
2. What screen devices do you have in your household? How many of each of them do you have in your household? Who usually uses them and for what purposes?
3. What does your child, who is in the first year of schooling (Y1), usually do when he/she is at home?
4. Does your Y1 child use screen devices excessively? Do you have any concerns about your Y1 child's excessive screen time?

Research Questions

5. What is your screen time experience with the presence of your Y1 child at home?
   - What screen devices do you use at home when your Y1 child is at home?
   - For what purposes do you use screen devices when your Y1 child is at home?
6. How is your screen time experience with your Y1 child at home? (In what context do you have screen time experience with your Y1 child at home?)
   - Who is at home during your screen time?
   - What are the other family members, including your Y1 child, doing during your screen time?
   - Where do you have screen time?
   - How long is your screen time?

FAMILY ACTIVITIES WHEN PARENT(S) AND CHILD ARE AT HOME

7. What are the typical family activities when both parent(s) and child(ren) are at home?
8. Has your Y1 child ever imitated you as parent(s), in terms of screen use behaviour? Who else has your Y1 child imitated in terms of screen use behaviour?

REFLECTIONS ON CHILDREN'S SCREEN TIME

9. If you have concerns over your children's excessive screen time, what reasons do you think have caused the excessive screen time? (optional based on question 4)
10. What do you think causes children to use screen devices?
11. How do you define excessive screen time? What harmful effects does excessive screen time have on children?
12. What measures would you take to prevent your child from having excessive screen time?