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The Effects of Screen Time on Children

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The Effects of Screen Time on Children

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NURS 4500: Nursing Research and Senior Thesis

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Abstract

With the development of technology continuing to grow at a fast-paced pace in society, children are now becoming exposed to such technology at a younger age. The introduction of smartphones and tablets, which is defined as screen time in this paper, are being introduced to children as young as 6 months of age. Instead of children playing with toys recommended for their age, they use screen time for their play needs and entertainment. Some parents use screen time as a distraction and/or relief for their own needs when the child is upset or they're unable to tend to the child. This can lead to a decrease in parent-child interaction which may impair the child's ability to socialize with others, as well as affect their language development, which is associated with the communication that can help developing brains. My research question is: How does screen time affect children's behaviors/coping, health, and language development?

In my literature review, I searched various databases for primary articles related to the topic and organized the articles I found into categories, including behavioral effects on children, health problems that can occur in children, and how the use of screens impact a child's language development. Based on the research in the literature review, I propose a study to survey parents in the San Francisco Bay Area, California. This study aims to add to the limited research regarding the effects of screen time on a child's behavior, overall health, and language development.

Acknowledgements

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Introduction

In 1927, the very first television was released to the public. This provided entertainment to people in their own homes. Soon after in 1994, the very first smartphone was released to the public. This touchscreen phone was like any other phone, however it allowed users to access their emails, a calendar, a calculator, and other networks from wherever and whenever. Later in 2007, the Apple iPhone came out which changed the game for smartphones paving the way for ever-growing technology. This led to other companies producing similar smartphones in the phone market. In 1977, the first home computer was released which provided affordability and accessibility to the public. In 2010, iPads were released which was a touchscreen tablet with many applications providing more entertainment to users as well as being portable.

As technology continues to develop and grow, the users are expanding from adults to children to infants as these appliances are coming out with applications for a desired age group. These devices are providing entertainment to kids which can be helpful, however too much screen time from these devices can interfere with a child's development and overall way of thinking. When parents use these devices to entertain their children to keep them busy while they are doing other things or even to help stop the child from crying, they are changing the child's mindset to where the child develops an attachment to the device. This attachment can interfere with the child's life and may evolve into an addiction. In my literature review, many of the studies look into the effects of screen time on children on their behavior and coping skills, their overall health, and their language and cognitive development. From examining their studies, I've used it to help guide my proposed research study.

Research Question

How does screen time affect children's health, behavior, and language development?

Literature Review

The following research literature was found using multiple databases through Dominican University of California library, such as PubMed, Science direct, and Iceberg. The keywords used for a successful search included: technology, children, behavior, coping, ipad/tablet, maladaptive, screen addiction, media use, health problems, language development, and screen time. From this search, I was able to find six primary research articles which I chose based on their relationship to my thesis, as well as their in-depth exploration and results highlighting the effects of screen time on children.

This literature review includes three categories. The first category, “Behavior and Coping,” contains articles that explain the behavioral effects children can exhibit from excessive screen time especially at a younger age. The second category, “Health Problems,” contains articles that describe the health problems that can occur in young children from unrestricted screen time. The third category, “Language Development,” contains articles that illustrate how children’s language development can be impacted by screen time. (For a summary of each article, please see the literature review table in appendix A, at the end of this thesis).

I. Behavior and Coping

The following articles in this category examine the relationship between a child’s behavior and temperament among screen time use. They also take into consideration the parents’ influence on their children in regards to screen time usage. I chose these articles to be in this category because their studies are investigating the associations between screen time, child’s behavior, child’s coping skills, and parental influences. Also, their results show how early exposure and excessive screen time usage affects children’s temperament and behavior.

In the first article, “Screen Media Exposure in Pre-School Children in Turkey: The Relation with Temperament and the Role of Parental Attitudes” (Sarı et al., 2021) develops a study to analyze the relationship between parental perspectives, a child’s temperament, and a child’s exposure to screen time in children aged three to seven in Turkey. In this quantitative and qualitative survey, the researchers had a sample size of 210 children and they had the children’s parents fill out three questionnaires. The first questionnaire was a sociodemographic information form and a screen media assessment which asks questions about the child’s birth history, nutrition habits, primary caregiver in the child’s first year, child’s sleep, child’s diseases, child’s bad memories, when the child first used screens, the duration of screen use, having background television on, television in child’s room, the content they watched/used on screens, and the purpose the device were given to children. The second questionnaire was a children’s behavior questionnaire-short form which is a scale that assesses temperament, also known as the child’s self-regulation and emotions. The third questionnaire was a parent attitude research instrument which is a scale that assesses the parents feelings about raising their children. They analyzed the data with an independent t test and a one-way analysis of variance (ANOVA). The major findings from this study were that the effects of background TV on emotion regulation, perceptual sensitivity, and focus were all detrimental. In addition, parents would allow children with challenging temperaments to watch tv earlier, children with demanding temperament features may watch more tv as a method of coping, and early infancy through preschool screen exposure appeared to be influenced by temperamental traits. Other findings from this study were strict parents allowed their kids to use screen time for longer periods to complete their own tasks or feed the kids, and the amount of time spent using a screen tends to increase along with a child’s degree of rage (Sarı et al., 2021). (See appendix for strengths and limitations)

In the second article, “Media Use of Mothers, Media Use of Children, and Parent-Child Interaction are Related to Behavioral Difficulties and Strengths of Children” (Poulain et al., 2019) examines the relationships between, parent-child interactions, screen use by moms and children, and children’s behavior strengths and challenges. In this cross-sectional quantitative questionnaire, the researchers had a sample size of 553 children, ages two to nine, and their mothers from Leipzig, Germany and surrounding cities. They had the children’s mothers answer five questionnaires. The first questionnaire was a socio-economic status questionnaire which assessed the parents' education, occupation, and household equivalent income. The next two questionnaires assessed screen use of children and mothers, which assessed screen use on weekends and weekdays and duration of the screen time. The third questionnaire was a questionnaire on the prevalence of parent-child interactions which assessed activities that the child would do with the mother such as doing puzzles or reading a book. The fourth questionnaire was a scale that assessed the child’s prosocial behavior, emotional problems, peer-relationship problems, conduct problems, and symptoms of hyperactivity and inattention. They analyzed the data using simple regression analyses and multiple regression analyses. The major findings from this study was that six to nine year olds had a higher screen time usage compared to two to five year olds, two to five year olds had a significantly higher interaction score than six to nine year old children, and the symptoms of hyperactivity and inattention was reported more frequently than peer connection issues, which were reported the least frequently. Additional findings were a high correlation between mother’s high screen time and children’s high screen time; children’s total behavioral issues scores were substantially correlated with mothers’ high screen time, children’s high screen time, and poorer parent-child interaction ratings; and children who spend more time on screens have greater conduct issues, hyperactivity and inattention

symptoms, and fewer prosocial behavior (Poulain et al., 2019). (See appendix for strengths and limitations)

These articles examined many factors that affect children's use of screen time and how it negatively affects their behavior, temperament, and coping skills. They investigated components that have not been taken into account before such as the use of background TV, when the child was first introduced to screens, reasons the child was given a screen, parent-child interactions, and screen use of mothers and how this impacts the child's usage of screen time, behavior, emotion regulation, and coping abilities. As well as, the younger participants have not been fully studied previously so the impact of their development have not been clearly identified. The strengths of these studies are demonstrated by their unique approach.

II. Health problems

The research articles in this category examine the physical and mental health problems that can occur in children with excessive screen use, otherwise known as problematic or addiction. The physical problems that can occur are obesity and sleep problems, while the mental health problems that can occur are attention-deficit/hyperactivity disorder, autism spectrum disorder, and depressive disorders. I chose these articles to be in this category because they have significant findings on the association between screen time in children and its impact on the child's health.

In the first article, "Problematic Internet Use in Children and Adolescents: Association with Psychiatric Disorders and Impairment" (Restrepo et al., 2020) investigates the relationships between problematic internet use and diagnoses of a variety of mental disorders in young people and determines the connection to sleep disturbances and poor physical health. In this mixed study with qualitative and quantitative data, the researchers had a sample size of 564 children,

ages 7 to 15 years old, and their guardians in New York City. There was a clinical history interview with the participants, along with seven questionnaires that were self and parent-reported, and computing the child's body composition. The first questionnaire was a general survey assessing internet use, basic demographic traits, socioeconomic status, dimensional assessments of domains related to mental health, and substance use. The second questionnaire was a schedule for affective disorders and schizophrenia – children's version which is a diagnostic measurement scale that gathers information from the child and their parent using historical records and assessments. The third questionnaire was an internet addiction test which assesses the level of internet addiction the child has. The fourth questionnaire was a barratt simplified measure of social status which assesses the parent's socioeconomic status. The fifth questionnaire was a Columbia Impairment Scale which evaluates overall performance throughout the areas of interpersonal relationships, psychopathology, academic performance, and leisure time. The sixth questionnaire asked questions about one's physical activity level for the past week. The seventh questionnaire was a sleep disturbance scale which assessed the sleep disturbances in different areas of sleep. Lastly, they evaluated the participants body composition measure by measuring the participants weight and height to calculate their body mass index, as well as calculating fat mass index using electrodes. They analyzed the data using logistic and linear regression analyses. One of the major findings from this study was participants aged 10 to 12, males, and participants with high socioeconomic level had a higher problematic internet usage. Furthermore, regardless of source, there were substantial positive relationships among problematic internet usage and depressive illnesses, and in the modified models, problematic internet usage was substantially linked to sleep disruptions. In addition, there were significant relationships between combined types of attention-deficit/hyperactivity disorder and self-

reported problematic internet usage, and there was a significant relationship between autism spectrum disorder and parent-reported problematic internet usage (Restrepo et al., 2020). (See appendix for strengths and limitations)

In the second article, “Internet Use Patterns and Internet Addiction in Children and Adolescents with Obesity” (Bozkurt et al., 2018) investigates the frequency and trends of internet addiction in obese children and adolescents, along with looking into how internet addiction and body mass index relate to one another. In this cross-sectional data quantitative survey, the researchers had a sample size of 437 children, ages 8 to 17 years old, from Turkey. This sample contained 268 children with obesity and 169 children within a normal BMI. All of the children had to answer an internet addiction scale, which was a self-report tool derived from the criteria for substance dependence listed in DSM-IV, however the children with obesity had to answer a personal information form which asked sociodemographic questions, internet usage habits and their goals. They analyzed the data using t-tests, Pearson’s test, Spearman’s test, and linear regression analysis. One major finding of this study was the prevalence of internet addiction was considerably higher in the obese group than in the control group. Another major finding was when the children in the obese group were compared to those without online addiction, the children with internet addiction had a greater overall weekly internet usage time. In addition, when the internet usage intentions of the two groups were compared, the group with internet addiction tended to spend more time on social networking sites and playing games online, whilst the group without internet addiction was shown to be more interested in looking up information or doing assignments. Lastly, in the obesity group, a higher body mass index was strongly correlated with higher internet addiction scale score and usage of the internet for more than 21 hours per week, while in the control group, there is a strong link between higher body

mass index and higher scores on the internet addiction scale (Bozkurt et al., 2018). (See appendix for strengths and limitations)

These articles' findings have expanded the research on the associations between children's screen time usage, their mental health such as depression and other mental disorders, the child's quality and quantity of sleep, and the child's body mass index. They broadened the age group by including children up to 17 years old. They considered the participants socioeconomic status which can have a factor in their screen usage as well as access to screens.

III. Language development

The following articles in this category examine the effects of screen time on a child's language development, especially since they are exposed to these devices at a critical point in time where their brain is still developing. In order to do a thorough assessment of their development, both of these articles are longitudinal studies that involved lower socioeconomic status participants and considered the content of media the child was exposed to. I chose these articles to be in this category because they both had similar findings on the child's language development which presents replication.

In the first article, "Infant Media Exposure and Toddler Development" (Tomopoulos et al., 2010) investigates whether the length and type of media exposure in 6-month-old babies are related to their development at 14 months. In this longitudinal qualitative analysis, the researchers had a sample size of 259 infants and their mothers who had a low socioeconomic status. They interviewed the mothers, evaluating the amount of screen time in the house with a 24-hour recall diary which consisted of what media the infant had been exposed to on the most recent normal day, the name of the program, and duration. The mothers answered four questionnaires, the Bayley Scales of Infant and Toddler Development assessing cognitive

development at age 14 months, the Preschool Language Scale-4 assessing language development at age 14 months, Patient Health Questionnaire-9 assessing symptoms of maternal depression, and the StimQ assessing the cognitive environment at home. They analyzed the data using Pearson correlations, multiple linear regression, and log transformations. One major finding from this study was that at 6 months old, 249 infants were exposed to screens. Other major findings were as the infants' exposure to screens increased, the lower their Bayley-III score went down and the lower their Preschool Language Scale-4 score went down. Lastly, 6 month old infants exposed to older child/adult content had a strong link with negative developmental outcomes at age 14 months (Tomopoulos et al., 2010). (See appendix for strengths and limitations)

In the second article, "Association of Screen Time Use and Language Development in Hispanic Toddlers: A Cross-Sectional and Longitudinal Study, analyzes the relationship between young Hispanic children's screen time consumption and their linguistic growth" (Duch et al., 2013) as well as investigate whether the linguistic development of children is influenced by media exposure. In this cross-sectional longitudinal analysis, the researchers had a sample size of 119 Hispanic infants, toddlers, and their caregivers in an Early Head Start program. They had the child's caregiver answer three questionnaires. The first questionnaire was about the child's screen time usage, family's leisure activities, child's play, sleep, and sociodemographic. The second questionnaire was a 24-hour screen time recall which asks questions like if the child has watched a particular show the previous day and may include other shows they watched, if the child watched with an adult or by themselves, also if the child watch adult media and if with adult or alone, and the duration of screen time. Lastly, the third questionnaire was an Ages and Stages Questionnaire: A Parent-Completed Child Monitoring System which is a developmental screener which asks questions about the child's personal-social development, problem-solving,

fine and gross motor skills, and communication. This was used to assess language development a year after the 24-hour screen time recall. They analyzed the data using bivariate analysis, Pearson moment product correlations, Pearson's χ^2 tests, variance test, and multivariable logistic regression with logit-link function. One major finding from this study was that the most popular kind of media used besides television was a cell phone. Furthermore, 38% of children were found to commonly watch TV during mealtime, infants and toddlers who watched 2 or more hours of television per day had 5.5 times the likelihood of receiving poor communication scores than those who watched less than 2 hours, and children who viewed well over 2 hours of child-directed media had a 6.25 times greater chance than those who viewed under 2 hours of child-directed media of receiving low scores on the ASQ3's communication domain. Also, the proportion of overall media consumption that was adult-directed stayed unchanged across ages, with younger infants being exposed to more adult-directed content (Duch et al., 2013). (See appendix for strengths and limitations)

These articles have produced significant findings between children's screen time and screen content with lower language development scores. They also examined a population that is not normally studied which is Hispanic children and children in a lower socioeconomic class. The findings from the first article lead to the second article's innovative study showing how their research can be replicated and can further this research topic.

IV. Discussion

The findings from these articles have shown the associations between screen time usage with children with challenging and demanding temperaments which helps the parent's calm the child down or keep them busy while the parent can do other things. Also, the amount of screen time usage can increase the child's rage intensity, while TV playing in the background can affect

their emotion regulation, focus, and perceptual sensitivity. Furthermore, the parents' screen time can influence and reflect the child's screen time which has associations with the child's behavioral issues, conduct issues, poor prosocial behavior, and poor parent-child interactions. Screen time in higher socioeconomic levels affects children's sleep and mental health, while screen time in lower socioeconomic levels affects the children's language and cognitive development. Lastly, there are associations between a child's high body mass index and increased screen time, and exposure to adult-directed content and child's lower language development score.

The overall strengths of these studies are large sample sizes, findings had led to an innovative study (one of the articles) was even mentioned in another study, some of these studies had claimed that they were the first study to their knowledge, some stated the approval from an Ethics committee or IRB, studies findings had provides avenues for further research, and some studies explored underrepresented populations. Overall, the studies had consistent findings with most other studies. The first limitation of these studies are generalizability due to where the study was conducted, the socioeconomic status, gender, and ethnicity. The other limitations of these studies are recall bias and self-report bias, some studies didn't give questionnaires to certain groups, and some studies didn't consider assessing certain factors that other studies have examined. These research studies showed the need to continue developing thoughtful studies to investigate screen time effects on children especially with technology continuing to evolve which means more factors to look at. Findings from these articles will help guide me in developing a study that takes into account all of the questions on questionnaires asked of the participants in previous studies. The proposed study also will have a more diverse and inclusive participation.

Proposal for Further Study

The first gap that I've identified in the research literature is that the participants come from certain socioeconomic backgrounds and are from certain races. This lack of diversity decreases the generalizability of the studies and may cause discrepancies in interpretation, if researchers try to apply the findings to a broader population. Also, the use of screen time can vary between the different cultures that were examined, most studies being from Turkey or Germany. Thus, the question that arises from these gaps are: How does screen time affect children in the United States?

My proposed study relates to my literature review because I would be using the same questionnaires that were used in the studies to combine it into one big questionnaire. Therefore, I would be looking at all components that are necessary to investigate and determine if the effects of screen time for children in the United States are similar to the effects experienced by children in other countries. This would allow me to get a better understanding of how screen time affects children's health, behavior, and language development. Also, my study will include a broad range of socioeconomic backgrounds and races. The goal will be to provide a greater overview of associations, since affordability, work-life balance of parents, and cultural practices and/or ways of thinking can influence children's use of screentime.

I.Theoretical Framework

In Roy's adaptation model of nursing, he states that, "a person is a bio-psycho-social being in constant interaction with a changing environment. He or she uses innate and acquired mechanisms to adapt" (Petiprin, 2020, para.5). As the world advances in technology, children are given screen devices for their entertainment and needs which changes the way of living for children because parents and families are adapting to the new way of society. Screen usage is

increasing among children and being exposed to children from a younger age is now having an effect on these children's health, language development, and behavior. His model includes a nursing process with six steps, the first step assesses the patient's behavior while the second step assesses the patient's stimuli (Petiprin, 2020). In my proposed research, we would be assessing the children's behavior, health, and language development and assessing if screen time is the 'stimuli'. The following steps of the model are patient's diagnosis, patient's goals, interventions, and evaluation (Petiprin, 2020). In my proposed research, the aim will be to assess the amount of screentime and determine if there is a connection between screen time and the patient's diagnosis, i.e. the children's health, language development, and behavior, as well as any other factors that should be taken into consideration. From this, we, healthcare providers can come up with solutions, preventions, and education for families regarding screen usage. In a later study, we can decide if these interventions had made a positive impact on these families which then we can provide these to all families in the United States.

II. Primary Research Aims

My overall research goal is to study all children from different backgrounds and situations in the United States, in order to compare their use of screen-time and its potential effects. My primary aim is to survey the parents of children to gain insight into their children's use of screen time and their health, behavior, and language development.

III. Ethical Considerations

In my study, there is not a vulnerable population due to the method being a survey and not having the kids do certain tasks nor observing them. The first protection that would be in place to protect the participants is that participation is voluntary. On the advertisements and on the google survey, there would be information that the participants can choose if they want to

participate in the survey and can withdraw at any point in time. The second protection would be that the participants would sign an informed consent which would provide all the information about the survey which would help them decide if they do want to participate. The information provided would be what the study is and why we are doing the study, the risks and benefits for the participants, the length of the study, and a supervisor's contact information and approval number for the study. The third protection would be a section on the survey informing the participant about data pseudonymization, that with each form they will have a random number attached to the form when analyzing data. Participants' privacy will be respected and any information they provide will remain strictly confidential. The fourth protection would be a section on the survey informing the participants that their responses are confidential and would be maintained on a password-protected computer. The fifth protection would be to provide resources during and after the survey to participants who need assistance to reduce the possibility of anxiety or other harm. The sixth protection would be making sure that all the results are communicated as is and not exaggerated or changed. Lastly, the Dominican Internal Review Board will review my study proposal and its ethical considerations. Data collection would only begin after IRB approval.

IV. Research Study Design

For my research, I propose to do an observational, longitudinal, mixed method (qualitative and quantitative) study to investigate the effects screen time has on children in the United States over the course of one year. In addition to effects found in the literature, I hope to identify other effects (positive or negative) that may take place, but have not been examined yet.

V. Methodology

Data will be collected five times over the course of one year via a survey for parents.

Data collection points will include: once at the start of the study; at the end of months three, six, and nine and then again after one year, to track changes, if any.

For the quantitative portion of the study, the initial survey will ask participants about the:

- Parent's or guardian's education
- Parent's or guardian's occupation
- Household income
- Parent's balance of work/home life
- Parent-child interactions
- Child's age in years and months
- Child's weight in pounds
- Child's height in inches
- Child's race
- Child's emotional problems
- Child's conduct in certain situations
- Child's prosocial behavior
- Child's temperament
- Age the child was introduced to screens
- Child's duration and usage of screens
- Child's screen time content (adult/child)
- Person(s) with whom the child most often uses the screen
- Child's preferred device
- Questions that assess the child's mental health

- Child's level of addiction from the parent's/guardian's perspective
- Child's physical activity
- Child's preferred choices for leisure time
- Child's sleep
- Child's coping skills
- Child's communication and language skills
- Child's health

For the subsequent quantitative portions of the surveys, parents will not be asked to repeat answers to questions that have not changed (such as the child's ethnicity). Questions will ask about changes from the baseline entries for questions about the parents occupation or education, or the household income. For most survey questions, the parent will be able to rate their answers on a scale of 1-10 to further assess. For the questions that are more specific, such as the parents' occupation or child's age when first introduced to screens, an opportunity to fill-in-the-blank will be provided. These will later be coded and analyzed quantitatively.

For the qualitative portion of the study, the surveys will all contain an open-ended comment section after each question for the parent or guardian to elaborate and provide additional information. There also will be a final question that asks participants to please add any additional comments that you may have about their child and/or screen time.

The parents will be contacted at the end of the study, after one-year and asked to answer follow-up questions about the child's language and development skills and the child's screen time information. All surveys will be completed via a Google docs survey that will be linked to an email to the participants. The online surveys will be easily accessible and can be filled out at a convenient time for the parents. The answers to quantitative questions will be

analyzed through a one-way analysis of variance (ANOVA). Simple and multiple regression analysis, logistic and linear regression analysis will be used to assess changes over time and correlate the child's language and development skills with the amount of screen time.

For the qualitative answers, content analysis will be used. Content analysis will include reading through participants' answers carefully, meeting with other researchers on the study team to discuss the answers, group them according to similar words and phrases, finding exemplar phrases, and creating categories. From the categories, themes may be derived.

For those participants who need and request it, there will be resources, such as referrals to counseling services, offered to help the parents and children.

VI. Description of the Sample

The sample will represent a diverse population with respect to racial and economic status, including parents or guardians who care for children, ages from infants to 18 years old. This sample size would be more than 100 participants. The strategy for recruitment would be social media, shops/businesses, and through schools. For social media, there would be advertisements about the study along with a link to the google form which makes it easier for people to contribute. For shops/businesses, there would be a sign posted about the study along with a QR code to the survey. For schools, teachers and administrators would announce the survey to parents in which they would provide a handout with information about the survey and a QR code to the survey.

Conclusion

The literature review had displayed a vast amount of data on how screen time interrupts a child's language development, behavior development, and overall health. As the child's use of screen time increases, their language development scores decrease which can impact the child's

ability to communicate and succeed in school. The exposure of screen time among children has shown connections between a child's emotion regulation, behavioral/conduct issues, poor parent-child interactions, and poor prosocial behavior which can impact the child's ability to develop meaningful relationships with their peers and proper coping mechanisms. As the child's exposure to screen time increases, their sleep and mental health are affected, as well as, their body mass index increasing due to a sedentary lifestyle and not getting enough exercise. As technology continues to advance in this world, it is important to continue our research on children so we, healthcare professionals, can provide the correct recommendations and education regarding screen use among children to prevent these changes in children from occurring.

My proposed research would help advance the body of research literature regarding screen use affecting children which can help healthcare providers take into consideration other factors that may be influencing a child's screen time which then can be addressed. These factors include a child's family socioeconomic status and their parent's work-life balance. If there is a relationship between these factors and a negative impact on children's health, language development, and behavior, the healthcare providers can provide the necessary resources and help that these families and children would benefit from. This would advance the profession of nursing because if we see that there is a relationship, we can use this knowledge to educate other families about screen time usage and provide resources that address these factors to prevent this from occurring in their children. The next steps would be to develop a study that includes interventions and prevention measures to see if it does have a positive effect on these children and families.

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Appendix

Authors/Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
<p>Poulain, T., Ludwig, J., Hiemisch, A., Hilbert, A., & Kiess, W. (2019). Media Use of Mothers, Media Use of Children, and Parent-Child Interaction Are Related to Behavioral Difficulties and Strengths of Children. <i>International journal of environmental research and public health</i>, 16(23), 4651. https://doi.org/10.3390/ijerph16234651</p>	<p>Investigate the associations of media use of children, media use of mothers, and parent-child interactions with behavioral strengths and difficulties in children</p>	<p>Population of interest: 2 to 9 year old children and their mothers from the city and the surrounding areas of Leipzig Sample size: 553 children and their mothers</p>	<p>Cross-sectional data quantitative questionnaire</p>	<p>Media use assessed by children and mother Frequency of interactions between children and their parents Behavioral strengths and difficulties of children measured by an instrument that assessed emotional problems, conduct problems, symptoms of hyperactivity/inattention, peer-relationship problems, and prosocial behavior Socio-economic status questionnaire on parental education, parental occupation, and household equivalent income</p>	<p>Children aged 6 to 9 used screens more frequently than children aged 2 to 5 did The mean engagement score was 34.14, meaning that each of the 11 activities was said to occur once a week on average Peer-relationship issues were the least frequently mentioned Between children aged 2 to 5 and those aged 6 to 9, there were dramatically different percentages of kids identified as being at emotional risk High maternal screen time was highly correlated with high kid screen time</p>	<p>Children who spend a lot of time on screens, including their mothers, are more likely to have behavioral issues Important for parent-child interaction and activities that limit the negative impacts of household use of electronic media Large sample size Findings led to an innovative study First study to investigate screen time of children and parents, parent-child interactions, and behavioral strengths and difficulties of children</p>	<p>German version questionnaires limited generalizability Didn't distinguish between media usage for entertainment vs academic purposes Didn't distinguish frequency of screen time Didn't assess the duration and quality of joint activities and whom they were with Based on reports of mothers which can create biases 5% of participants belonged to the low SES, 50% to the middle SES, 45% high group SES</p>

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					Mothers who spend a lot of time on their screens, kids who spend a lot of time on their screens, and kids who had less parent-child interaction all had considerably higher ratings for overall behavioral issues in their kids	Approved by the Ethics Committee	Had less parent-child interactions for school-age children that they might be more interested in, like academic activities
Sari, B. A., Taner, H. A., & Kaya, Z. T. (2021). Screen media exposure in pre-school children in Turkey: the relation with temperament and the role of parental attitudes. <i>The Turkish journal of pediatrics</i> , 63(5), 818–831. https://doi.org/10.24953/turkijped.2021.05.010	Evaluate the relation between screen media exposure, the child’s temperament, and parental attitudes in 3-7 year old children	Population of interest: children 3 to 7 years old in Turkey Sample Size: 210 children	Quantitative survey Qualitative	Rothbart’s child behavior list assessed child’s temperament Parenting attitude research instrument is a scale that determines the parental attitudes Screen media exposure assessment questionnaire had questions about the age the child started using the TV, smartphone and/or internet, and duration of their daily usage	The age at which a child began viewing TV was inversely connected with an increase in activity level, approach, and discomfort, while shyness was positively correlated with the same phenomenon The length of time spent viewing TV directly correlated with discomfort temperament subscale scores Inhibitory control, perceptual sensitivity,	Interesting and useful data Both temperament and parenting styles affect screen media exposures Talks about screentime as a coping mechanism Talks about digital parenting Provides call to action examples Approved by Baskent University Institutional	Done in turkey limited generalizability: studies conducted in USA have shown that children watch videos from Youtube and YoutubeKids more; in this study, video games were used more Higher level of class therefore more accessibility to screen medias and babysitters Previous experiences were questioned while collecting data which can cause recall bias

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					<p>and attention are all negatively correlated with background TV</p> <p>The length of time spent playing with a smartphone was found to be positively correlated with dependence, marital conflict, and strictness and authoritarianism factors</p> <p>Exposure to screen media was negatively impacted by negative temperament traits, and bad parenting practices made this link worse</p> <p>Parents would let children with a challenging disposition to watch TV early</p> <p>Children with challenging temperaments may watch more TV as a coping method</p>	<p>Review Board and Ethics Committee</p> <p>Large sample size and fairly even with boys and girls</p>	

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					<p>Early infancy screen exposure as well as pre-school exposure appear to be influenced by temperament traits</p> <p>Easy-going kids didn't have access to the internet at home because their parents don't use it</p> <p>Authoritarian parents let their children use the internet, tablets, and smartphones for longer periods of time while using this screen time to complete their own tasks or feed the kids</p> <p>The amount of time kids spend on smartphones tends to increase with their degree of rage; if scores of excessive mothering rise above the crucial value, this relationship tends to be stronger</p>		

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					<p>The amount of time spent using a smartphone tended to grow as the children’s anger levels did, and this relationship tended to be larger if authoritarian control ratings rose above the critical level</p> <p>The age at which children begin watching TV tended to decline as children’s levels of falling, reactivity, and comfortability grew</p>		
<p>Restrepo, A., Scheininger, T., Clucas, J., Alexander, L., Salum, G. A., Georgiades, K., Paksarian, D., Merikangas, K. R., & Milham, M. P. (2020). Problematic internet use in children and adolescents: associations with</p>	<p>Investigate relationships between problematic internet use and diagnoses of a variety of mental disorders in young people and determine the connection to sleep disturbances and poor physical health</p>	<p>Population of interest: children 7 to 15 year old in New York City</p> <p>Sample size: 564 children and their guardians</p>	<p>Mixed study with qualitative and quantitative data</p>	<p>Survey assessing internet use, basic demographic traits, socioeconomic status, dimensional assessments of domains related to mental health, and substance use</p>	<p>Participants aged 10 to 12, males, and participants with high socioeconomic level had a higher problematic internet usage</p> <p>Regardless of source, there are substantial positive relationships among problematic</p>	<p>Large sample size</p> <p>Provides avenues for further research</p> <p>Findings led to an innovative study especially on problematic internet use and sleep issues</p>	<p>Recall bias in self-reporting</p> <p>Sampling bias due to larger youth population, larger male representation, larger children representation from higher socioeconomic status, and larger Caucasian representation</p>

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<p>psychiatric disorders and impairment. <i>BMC Psychiatry</i>, 20(1), 1–11. https://doi-org.dominican.idm.oclc.org/10.1186/s12888-020-02640-x</p>				<p>Structured clinical history interview (participants race)</p> <p>Self and parent-report measures</p> <p>Schedule for affective disorders and schizophrenia – children’s version: diagnostic measurement scale that gathers information from the child and their parent using historical records and assessments</p> <p>Internet addiction test: questionnaire assessing the level of internet addiction the child has</p> <p>The Barratt simplified measure of social status: questionnaire which assesses the parent’s socioeconomic status</p>	<p>internet usage and depressive illnesses</p> <p>In the modified models, problematic internet usage was substantially linked to sleep disruptions</p> <p>Significant relationships between combined type of attention-deficit/hyperactivity disorder and self-reported problematic internet usage</p> <p>Significant relationship between autism spectrum disorder and parent-reported problematic internet usage</p>	<p>Mentions how too much screen time can increase sleep disturbances and has substantial associations with ADHD, ASD, and depressive disorders</p>	<p>Didn’t assess the content of screen use and the questionnaire is older which means doesn’t have newer content usage</p> <p>Self-reported questionnaires were only given to children 7 and up, however parent-reported questionnaires were given to all ages in the sample</p>

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				<p>Columbia Impairment Scale: evaluates overall performance throughout the areas of interpersonal relationships, psychopathology, academic performance, and leisure time</p> <p>Physical activity questionnaire: questions about one's physical activity level for the past week</p> <p>Sleep disturbance scale: questionnaire that assessed the sleep disturbances in different areas of sleep</p> <p>Body composition measure: measured the participants weight and height to calculate their body mass index; calculated fat mass index using electrodes</p>			

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<p>Bozkurt, H., Özer, S., Şahin, S., & Sönmezgöz, E. (2018). Internet use patterns and Internet addiction in children and adolescents with obesity. <i>Pediatric Obesity, 13</i>(5), 301–306. https://doi-org.dominican.idm.oclc.org/10.1111/ijpo.12216</p>	<p>Investigate the frequency and trends of internet addiction in obese children and adolescents. Also, looked into how internet addiction and body mass index relate to one another.</p>	<p>Population of interest: children 8 to 17 year old in Turkey</p> <p>Sample size: 437 children (268 diagnosed with obesity and 169 who are healthy)</p>	<p>Cross-sectional data Quantitative survey</p>	<p>Personal information form: asked sociodemographic questions, internet usage habits and goals of children with obesity</p> <p>Internet addiction scale: self-report tool derived from the criteria for substance dependence listed in DSM-IV</p>	<p>The prevalence of internet addiction was considerably higher in the obese group than in the control group</p> <p>When the children in the obese group were compared to those without online addiction, the children with internet addiction had a greater overall weekly internet usage time</p> <p>When the internet usage intentions of the two groups were compared, the group with internet addiction tended to spend more time on social networking sites and playing games online, whilst the group without internet addiction was shown to be more interested in looking up information or doing assignments</p>	<p>First study to explore the frequency and trends of internet addiction in obese children and adolescents</p> <p>Approved by ethics committee</p> <p>The association of internet addiction and body mass index findings were similar to other studies</p>	<p>Done in turkey limited generalizability</p> <p>Personal information form was only given to obese children</p> <p>Self-report: Questionnaire may have socially undesirable biases</p> <p>Did not assess physical exercise, dietary, and sleep patterns of participants which may have led to their obesity</p>

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					<p>In the obesity group, a higher body mass index was strongly correlated with higher internet addiction scale score and usage of the internet for more than 21 hours per week.</p> <p>In the control group, there is a strong link between higher body mass index and higher scores on the internet addiction scale</p>		
<p>Duch, H., Fisher, E. M., Ensari, I., Font, M., Harrington, A., Taromino, C., Yip, J., & Rodriguez, C. (2013). Association of Screen Time Use and Language Development in Hispanic Toddlers: A Cross-Sectional and Longitudinal Study. <i>Clinical Pediatrics</i>, 52(9), 857–865. https://doi-</p>	<p>Analyze the relationship between young Hispanic children's screen time consumption and their linguistic growth. Also, investigate whether the linguistic development of children is influenced by the media exposure (child-directed vs. adult-directed)</p>	<p>Population of interest: Hispanic infants and toddlers, and their caregivers in an Early Head Start program</p> <p>Sample size: 119 infants and toddlers and their caregivers</p>	<p>Cross-sectional longitudinal analysis Qualitative and quantitative</p>	<p>Questionnaire on child’s screen time usage, family’s leisure activities, child’s play, sleep, and sociodemographic</p> <p>24-hour screen time recall involved questions like if the child has watched a particular show the previous day and may include other shows they watched, if the</p>	<p>The proportion of overall media consumption that was adult-directed stayed unchanged across ages, with younger infants being exposed to more adult-directed content</p> <p>The most popular kind of media used besides television was a cell phone</p>	<p>Approved by the IRB</p> <p>Results of this study are coherent with other studies, especially Tomopoulos</p> <p>Findings explores an underrepresented population in studies</p>	<p>Majority is Hispanic and lower socioeconomic status limiting generalizability</p> <p>Language barriers due to children watching child-directed media in English</p> <p>24-hour recall completed once and possible the screen time habits may vary</p>

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<p>org.dominican.idm.oclc.org/10.1177/0009922813492881</p>				<p>child watched with an adult or by themselves, also if the child watch adult media and if with adult or alone, and duration of screen time</p> <p>Ages and Stages Questionnaire: A Parent-Completed Child Monitoring System: a developmental screener which asks questions about the child's personal-social development, problem-solving, fine and gross motor skills, and communication; used to assess language development in this study a year after the 24-hour screen time recall</p>	<p>38% of children were found to commonly watch TV during mealtime</p> <p>Infants and toddlers who watched 2 or more hours of television per day had 5.5 times the likelihood of receiving poor communication scores than those who watched less than 2 hours</p> <p>Children who viewed well over 2 hours of child-directed media had a 6.25 times greater chance than those who viewed under 2 hours of child-directed media of receiving low scores on the ASQ3's communication domain</p>		<p>between weekday and weekends</p> <p>Recall bias and self-report questionnaire answered by parents, may have socially undesirable biases</p>
<p>Tomopoulos, S., Dreyer, B. P., Berkule, S., Fierman, A. H., Brockmeyer, C., &</p>	<p>To investigate whether the length and type of media exposure in 6 mos. old babies are</p>	<p>Population of interest:</p>	<p>Longitudinal qualitative analysis</p>	<p>Interviewed the mothers, evaluating the amount of screen time</p>	<p>Infants' Bayley-III scores decreased as their exposure to screens increased</p>	<p>Provided useful information on children as young as 6 mos.</p>	<p>With media diaries, there is a possibility that data collected may underestimate quantity</p>

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<p>Mendelsohn, A. L. (2010). Infant media exposure and toddler development. <i>Archives of pediatrics & adolescent medicine</i>, 164(12), 1105–1111. https://doi.org/10.1001/archpediatrics.2010.235</p>	<p>related to their development at 14 mos.</p>	<p>Infants and their mothers in low socioeconomic status Sample size: 259</p>		<p>in the house with a 24-hour recall diary: asked what media the infant has been exposed on the most recent normal day, the name of the program, and duration</p> <p>Calculated total duration of exposure, content of exposure (educational youth programs, noneducational youth programs, adult-oriented programs, unknown programs)</p> <p>Assessed cognitive development at age 14 mos (Bayley Scales of Infant and Toddler Development)</p> <p>Assessed language development at age 14 mos (Preschool Language Scale-4)</p>	<p>Infants’ PLS-4 scores decreased as their exposure to screens increased</p> <p>249 infants were exposed to screens at the age of 6 mos.</p> <p>Older child/adult material exposure in 6 months old infants was strongly associated with less favorable developmental outcomes at 14 months</p>	<p>Studied the effects of media on children</p> <p>Use of detailed media diaries to quantify duration based on content</p> <p>First to assess the correlation between exposure to media in infants and their outcomes on language and cognitive development, especially in low socioeconomic status families</p> <p>Provides strong evidence in support of the American academy of pediatrics recommendations of no media exposure prior to age 2 years</p> <p>Approval from the IRB</p>	<p>of media in the home and only cover 1 typical day</p> <p>Limited exposure to young child-oriented noneducational media, reducing ability to draw conclusions about its effect</p> <p>Lower effects on expressive compared with receptive language tests may reflect limited expressive language at age 14 mos</p> <p>Results apply to exposure in infants from families with low SES, primarily from a Latino immigrant background, and may not be generalizable to children in families with greater economic resources</p>

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				Assessed symptoms of maternal depression (Patient Health Questionnaire -9) Assessed cognitive home environment using StimQ			Results are more specific for infant-early toddler period, given rapid changes in development and changes in content of exposure over time