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Media Use Management with Toddlers and Preschoolers: Introducing Screen Time Recommendations in Pediatric Primary Care

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Executive Summary

Introduction of the Problem

The acceleration of the popularity and availability of technology in the form of television, smart phones, tablets, and more has initiated the development of new challenges and the subsequent need for parents and guardians to develop and implement healthy boundaries with their children. With nearly 98% of children ages zero to eight-years-old having access to television and a secondary form of technology in their home, child-access to screens is ostensibly limitless (Fuller, 2019; Rideout, 2017; "Media and Children," n.d.). This availability is proving to affect the development of young minds, both in positive and detrimental manners, indicating necessity in ensuring the positive effects are amplified while detrimental effects are avoided and minimized if possible (Rideout, 2017). Limited availability of studies regarding screen time, especially screens involving tablets or smartphones, limits understanding of how screen time affects child development. (Tang, Darlington, Ma, & Haines, 2018). This truth amplifies the role that healthcare providers play both in collaborating with families to formulate healthy boundaries appropriate for their family and in supporting their recommendations with evidence-based research.

This project, which involved the implementation of a screen time questionnaire, three-point education system, and a handout outlining the recommendations of the American Academy of Pediatrics, was implemented in a rural pediatric primary care office in Southern Illinois for all patients one- to five-years-old. Over one-fifth of the families in this city live below the poverty line, which is significantly higher than both the state and national average, and 50 to 70% of the children five-years-old and younger are experiencing life below the poverty level, which is nearly double the state average for this age group (Data USA, 2018).

Literature Review

Socioeconomic status has a significant influence on pediatric screen time consumption, as there is significantly increased consumption by families of low socioeconomic status in comparison to their higher-socioeconomic counterparts (Yang-Huang, et al., 2017; Rideout, 2017; Chiu, Li, Wu, & Chiang, 2017). Families of lower socioeconomic status consume on average an hour and 39 minutes more (Rideout, 2017). Parental education status mirrors financial status as well with children of parents with lower-level education consuming an hour and thirteen minutes more than their higher-level education counterparts (Rideout, 2017). This effect is compounded in families where the mother is of lower-educational status (Yang-Huang, et al., 2017). Conversely, neither gender nor race bare significant effect on screen time consumption (Rideout, 2017).

Screen time consumption has both positive and negative influence on the developing mind and body. Negative effects on child development include decreased walking and physical activity, decreased physical strength, increased body mass index, poor dietary choices, impaired concentration, delayed development of speech and language, increased aggression, and trouble sleeping (Elias & Sulkin, 2019; Anderson & Subrahmanyam, 2017; Domingues, 2017). These negative effects are both influenced as well as compounded by parental screen time consumption, as it often decreases the amount of quality parent-child one-on-one time and minimizes the child's involvement in activities that enhance cognitive growth such as reading (Anderson & Subrahmanyam, 2017). On the other hand, while numerous studies have discussed the negative effects of screen time consumption, others have identified its positive effects on child development (Anderson & Subrahmanyam, 2017). These positive effects are heavily influenced by the age of the child as well as the form of media being used, active engagement,

and purposeful involvement with the media by the child (Anderson & Subrahmanyam, 2017; Barr, McClure, & Parlakian, 2019). High quality programming and parental co-viewing of the material also enhances the positive effects while decreasing the negative effects of media on the child's developing language comprehension and literacy (Anderson & Subrahmanyam, 2017; Skaug et al., 2018; Domingues, 2017; Barr et al., 2019).

Parental beliefs and parental screen time habits, especially that of mothers, also influence children both in the immediate and in the future, as the habits they pass onto their children often affect their media consumption in the future (Barr et al., 2019; Skaug et al., 2018; Domingues, 2017; Anderson & Subrahmanyam, 2017; Chiu, Li, Wu, & Chiang, 2017). Parental screen time also greatly affects the parent-child relationship, as smartphones and television decrease the overall quantity and quality of parent-child interaction (Skaug et al., 2018; Anderson & Subrahmanyam, 2017). As discussed previously, this also affects the child's development, as young brains respond differently to in-person dialogue in comparison to screen-mediated, scripted dialogue (Domingues, 2017).

With all of this in mind, the AAP formulated a list of recommendations for each perspective age group and presented them in 2016. Unfortunately, only one in five families were aware of the recommendations according to the Common Sense Census from 2017 (Rideout, 2017). However, over 50% of the families were interested in hearing them, leaving an incredible opportunity for providers to bridge the gap between the AAP and families with young children. The AAP recommendations are as follows:

- "For children younger than 18 months, avoid use of screen media other than video-chatting. Parents of children 18 to 24 months of age who want to introduce digital media

should choose high-quality programming and watch it with their children to help them understand what they're seeing."

- "For children ages 2 to 5 years, limit screen use to 1 hour per day of high-quality programs. Parents should co-view media with children to help them understand what they are seeing and apply it to the world around them."
- "For children ages 6 and older, place consistent limits on the time spent using media, and the types of media, and make sure media does not take the place of adequate sleep, physical activity and other behaviors essential to health."
- "Designate media-free times together, such as dinner or driving, as well as media-free locations at home, such as bedrooms."
- "Have ongoing communication about online citizenship and safety, including treating others with respect online and offline."

("American Academy of Pediatrics Announces", 2016)

Project Methods

The aim of this project was to accomplish a five-step process, allowing for the analysis of screen time usage by children ages one- to five-years-old at well child appointments receiving care at a rural pediatric office in Southern Illinois. The five steps involved the following: 1) a simple questionnaire given to the parent or guardian of each child ages one to five who presented to the office for a well child appointment, 2) 3-point patient education based on AAP recommendations delivered by the provider at all three-year-old well child appointments, 3) a take-home education flier for all well child appointments for children ages one to five containing the AAP recommendations for ages one- to thirteen-years-old, 4) placement of the take-home flier on the bulletin board of every patient room, and 5) a thorough questionnaire for the two

providers to complete at the end of the project. Before initiation of the project, each of the staff members was educated on the purpose and benefits of the project and trained to use the screen time questionnaire. This project was submitted to the Institutional Review Board at Southern Illinois University at Edwardsville and deemed a quality improvement project.

As previously discussed, screen time present and future is heavily influenced by the socioeconomic status of each family. This project was implemented within the city of Gillespie, Illinois, which has a poverty rate of 20.8%, significantly higher than the national average of 13.1% (Data USA, 2018). When this project was conducted, there was not a screen time questionnaire nor a standardized education system used during annual well child appointments utilized by this office.

Evaluation

To allow for evaluation of this project, data were derived two separate, detailed ways. First, forty families with a child ranging from one- to five-years-old were screened with the screen time questionnaire, and each portion of the questionnaire was individually analyzed from May 2020 until August 2020. Until the initiation of this project, there was no standardized screen time questionnaire nor was screen time addressed in a standardized manner during well child checks at this office. Second, the two clinic providers completed a thorough Likert scale evaluation tool at the end of the implementation period in August 2020 to provide feedback on the screening process and on the overall perceived success of the project. It also provided the opportunity for them to share ideas for improvements that could be made regarding actively screening and educating families on AAP screen time recommendations in the future. They were also asked to share any thoughts on the feasibility and likelihood of continued use of the screening tool and education system long-term.

Two providers work at the rural clinic, and both were actively involved in the project's implementation; one is a pediatric physician while the other is a certified pediatric nurse practitioner. The nurse practitioner, who also served as the project's content expert, was the initial provider to implement the project. All families with children ages one- to five-years-old presenting to the office for well child appointments were screened using the screen time questionnaire. In most cases, the families were given a copy of the screening tool by the front office staff, but on particularly busy, difficult days, tools were occasionally completed in the patient room with assistance from the provider. The questionnaire was then quickly analyzed in-room by the provider, and subsequent education regarding the AAP recommendations was provided for every three-year-old well child appointment and for other age groups as deemed necessary by the provider. The data collected on the questionnaire included the child's age, the child's ethnicity, the number of daily screen time hours the child consumed, what the most used forms of media were, whether or not the child watched the media alone or if it was co-viewed, whether or not the child had access to media in their bedroom, and whether or not the family had ever been introduced to the AAP's recommendations for screen time.

Secondary evaluation of the project consisted of a twelve-question Likert scale that was completed by the two office providers at the completion of the intervention period. Both of the providers communicated great satisfaction with the guidance and instruction offered for the project's implementation, the screening questionnaire, the three-point education system, the educational handout, and the overall project itself. Unexpected staffing shortages due to the COVID-19 pandemic impacted the project greatly, causing 20-30% of families who came to the office for well child appointments within the chosen age parameters not to be screened with the questionnaire. However, regarding the families that were screened and subsequently educated,

both providers stated they experienced great parental receptiveness regarding the AAP recommendations. The pediatrician and nurse practitioner both believe the screening tool used throughout the implementation project was useful, and they plan to continue use of the tool in their office for children of all ages.

Due to the small sample size and rural geographic nature of the area in which this project was implemented, it would be beneficial to have this project repeated within a larger, more ethnically diverse area. Socioeconomic status was also intentionally excluded from the questionnaire, and retrospectively it could be beneficial to include it in future implementations given the effect of socioeconomic status on screen time habits in the pediatric population.

Impact on Practice

Though the COVID-19 pandemic increased complication in the implementation of the project, neither of the providers communicated the project brought increased stress or difficulty in the flow of the office with the exception of ensuring every patient received the screening tool. There were no complaints communicated by patient families. Use of the screening tool and education system allowed for seamless intervention, and there were no issues regarding the everyday practicality of the tools. This project allowed for forty families to be screened, allowing for the possibility of significant lasting health and developmental impact on the children and their families.

According to the office's nurse practitioner, this questionnaire and three-point education system are still being used within the practice today. These interventions could easily be implemented on a permanent basis for not only this practice but for other offices serving more varied ethnicities and demographics as well. They could also be implemented on a wider basis within an organization in both family and pediatric offices, as both practices see a large number

of children on a daily basis. The interventions could also be shared with an organization's practice management in a healthcare organization to elicit interest and allow for potential expansion and implementation of the project into other offices.

Conclusion

The implementation of this project went smoothly with both the pediatric physician and certified pediatric nurse practitioner, and it is hoped that other offices and organizations might adopt this interventional protocol in their communities. This project demonstrated that this screen time questionnaire and three-point education system could successfully be implemented within a pediatric primary care office, and it provided an excellent foundation on which future projects can be built. Future projects may focus on efforts to include offices serving larger populations with more varied demographics, including ethnicity and socioeconomic status.

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