The Effect of Screen Time/Technology on Children with Hearing Loss

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Introduction

The use of technology is often promoted as an impactful educational tool, but research often fails to link to these positive outcomes. Negative impacts of "screen addiction" on children whose brains are still developing is an often-expressed concern. This is due to excessive screen exposure correlating with increases in disorders such as depression, ADHD, anxiety, and aggression. However, some consider technology use to be valuable for social skills and connection. This study explores the correlation of screen exposure on the executive functioning and social skills of children with hearing loss between the ages 8-12. Executive functioning includes mental skills utilized in learning and development such as impulse/emotional control, working memory, prioritizing, and task organization. These are crucial to understanding positive behavior and achieving goals. Social skills are the ability to communicate with others verbally and non-verbally. These skills provide the foundations for academic and life success. Research has shown that even mild hearing impairments can influence cognitive and social-emotional development. Previous studies have exhibited that adolescence with hearing impairment were shown to have lower levels of well-being (tested by degree of loneliness and self-esteem) than their hearing counterparts as well as having more difficulty with personal and social relationships. This research seeks to determine how screen time impacts executive functioning and social skills in children with hearing loss.

Objective

- Define the correlation between technology exposure, executive function, and social skills in children with hearing loss
- Compare the impact of technology on children with hearing loss to typically developing children

Methods

The research materials included a technology questionnaire, the Social Skills Improvement System (SSIS) – Parent and Student version, and the Behavior Rating Inventory of Executive Function (BRIEF) – Parent version. Using the SSIS, an individual's social competence can be determined from an outside perspective as well as a self-evaluation. The BRIEF will assess behavioral regulation and metacognition. These materials were sent via mail and included a stamped and return addressed envelope. Once the materials are mailed back, screen time and assessment data were analyzed and compared to existing data for typically developing children.

Figure 1: SSIS - Parent and Student Overall Results

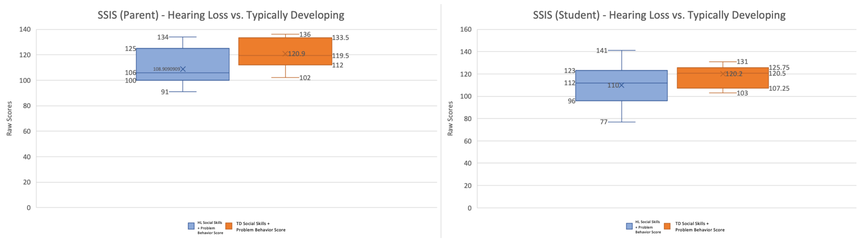
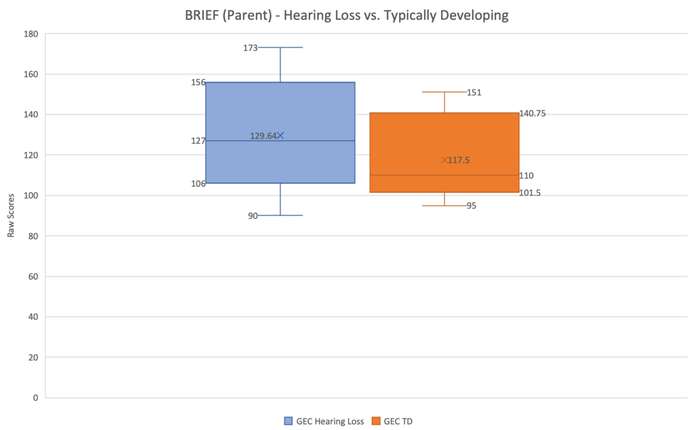


Table 1: Male vs. Female SSIS and BRIEF Results

	Hearing Loss		Typically Developing	
	Male Average	Female Average	Male Average	Female Average
Assessment				
SSIS (Parent)	102	111.2	117.3	**122**
SSIS (Student)	124.7	115.7	105.2	**126.5**
BRIEF (Parent)	124.7	**132.4**	83.7	120.3

Figure 2: BRIEF Parent Overall Results



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RESULTS

On assessments of social skills, typically developing children were more likely to score higher. However, on assessments of behavior and executive function, children with hearing loss were more likely to score higher.

Overall Comparison

As seen in Figure 1, on the SSIS-Parent and SSIS-Student typically developing children had a higher average score than children with hearing loss. Figure 2 depicts the results of the BRIEF, where children with hearing loss scored better than typically developing children.

Male vs. Female

Table 1 shows the male and female averages.
Females with HL scored better overall on BRIEF
Typically Developing females scored better on SSIS-Parent
Typically Developing females scored better on SSIS-Student

CONCLUSIONS

After comparing children who are typically developing to children with hearing loss, it was discovered that children with hearing loss still tend to struggle to be commensurate with their peers on assessments of social skills. However, despite previous research, children with hearing loss can develop executive functioning skills commensurate or greater than their typically developing peers. When we examine M vs. F results, we see that females of any population have the advantage, but typically developing children continue to do better on social skills.

Issues that may affect results: voluntary response sample, sampling bias (low # participants), COVID-19 impact on participation

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