



**PERNICIOUS AFTERMATHS OF SMART SCREENS ON COMMUNICATION IN CHILDREN- A SINGLE CASE STUDY ON ELECTRONIC SCREEN SYNDROME**

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**ABSTRACT**

Excessive screen time exposure have become an important environmental factor that hamper children's neuropsychological well-being. The early crucial period of a child in regard to their brain development and its refining with practice is substantial. This critical period is a time, when the development and maturation of functional properties of the brain, becomes strongly dependent on experience or environmental influences. Electronic Screen Syndrome (ESS), is the result of over exposure to screens through the use of video game systems, tablets and smart phones. ESS is essentially a disorder of dysregulation and designates an overstimulation of the kid's nervous system caused by excessive screen time that influences behaviour, mood, and focus. Excessive screen time exposure inhibits a child's ability to observe and experience the typical everyday activities they need to engage in order to learn about the world, leading to a kind of "tunnel vision," which can be detrimental to overall development. The current study aims to report a single case through a detailed account of Electronic Screen Syndrome (ESS) and its management outcomes.

**KEYWORDS :** Dysregulation, tunnel-vision, Electronic screen syndrome.

**INTRODUCTION**

Developing technology have paved the way to excessive screen time exposure which has been a grave concern in the recent years. Younger ages of screen viewing and early excessive screen exposure have become an important environmental factor that hampers children's neuro psychological well-being.<sup>1</sup>The ability to communicate is a key skill, and the better we are at it, the better our quality of life. It is important to nurture the communication skills so they are capable of expressing themselves in all aspects of life. The interpersonal skills hone their listening as well as their ability to empathise and interpret non-verbal communication cues. The early crucial period of a child in regard to their brain development and its refining with practice is substantial. This critical period is a time, when the development and maturation of functional properties of the brain, becomes strongly dependent on experience or environmental influences. During this time the brain is most receptive to learning a new language as well as building communication pathways that are crucial for the child's lifelong language development (Meehan et al.,2019).<sup>2</sup> The digital revolution has been one of the most influential changes for our life on Earth. Electronic Screen Syndrome (ESS), is the result of over exposure to screens through the use of video game systems, tablets and smart phones. ESS<sup>3</sup> is essentially a disorder of dysregulation. Dysregulation can be defined as an inability to modulate one's attention, mood or level of arousal in a manner appropriate to one's environment. The syndrome designates an overstimulation of the kid's nervous system caused by excessive screen time that influences behavior, mood, and focus. Excessive screen time exposure inhibits a child's ability to observe and experience the typical everyday activities they need to engage in order to learn about the world, leading to a kind of "tunnel vision," which can be detrimental to overall development.<sup>4</sup>

**Need Of The Study:**

In recent times there has been a spike in screen time exposure among children. The recent evidence and literatures suggesting the possible outcome and negative impact of excessive screen time has been reviewed and its reflection towards the developmental milestones of a child was considered. It is of utmost importance to spread awareness regarding the deleterious effects of excessive screen exposure on speech and language development. The association between Electronic Screen Syndrome (ESS) and its aftermaths has to be addressed following its existing possibility of management options.

**AIMS & OBJECTIVES:**

The current study aims to report a single case through a detailed account of Electronic Screen Syndrome (ESS) and its management outcomes.

1. To address Electronic screen syndrome (ESS) and to identify the impact of excessive screen exposure on child's speech and language development.
2. To investigate whether a clinically significant improvement will follow after therapeutic intervention for a child with ESS.

**METHOD**

**Participant:**

The study was carried out on a 2.1year old female who is a native Malayalam speaker and a resident of Calicut district, who was brought to the Department of Audiology and speech language pathology with the complaint of reduced verbal output. A detailed data was collected including, family history, developmental, medical and birth history, social maturity, emotional stability and behavioral histories of the client. The client had a screen exposure of 5-6 hours daily since the age of 1 year. Even though the participant's mother observed a delay in speech and language, concern came into role once the client started to exhibit stereotypic behaviours (repeated sticking and taking off stickers). Lack of parent-child interaction was observed. Child never indulged in play activities along with siblings and communicated non verbally through dragging mother towards the desired object. Current study compiled the ethical guidelines and informed consent were obtained from the parent of the participant.

**Tests:**

Detailed language assessment was done using The Receptive Expressive Emergent Language scale, REELS (Kenneth,1971) for the measurement of language skills in children. Results revealed a Receptive language age of (RLA) of 10-11 months and Expressive language age (ELA) to be scattered between 5-6 months to 8-9 months The modified checklist for Autism in Toddlers, M-CHAT (Diana L, 2001) revealed low risk of Autism (Figure.1). Based on the complaints registered and evaluation results the client was provisionally diagnosed as Speech and Language disorder secondary to (?) Electronic Screen Syndrome.

**Figure 1**

TESTS DONE	
REELS	
RLA-	10-11 MONTHS
ELA-	Scattered between 5-6 months & 8-9 months
M-CHAT-	Low risk of Autism

**Intervention:**

At the core, the intervention focused on gradual reduction in screen time exposure. Mother-child interaction as well as interaction with siblings were increased. Client's mother started to actively participate in engaging the client in parallel play with her as well as with elder siblings by using more passive toys and puzzles while playing.

With respect to language, conventional stimulation techniques like cup games using onomatopoeia were incorporated. The activities to improve verbal attention included singing rhymes with and without actions.

**RESULTS AND DISCUSSION:**

On the basis of assessment done, it was noted that the client had history of prolonged screen time exposure, which adversely affected the development of speech and language. The client underwent five months of speech and language intervention. At the time of discharge, the communication skills of the child improved remarkably from nonverbal mode to verbal. Stereotypic behaviours which have begun to emerge prior to therapy faded off completely.<sup>5</sup> Moreover, significant improvement in pragmatic skills and semantic skills were also observed. Client began to engage in play activities with siblings and exhibited heightened attachment towards mother. Mean length of utterance also improved to two words, with occasional use of three words. Language test results are shown in Figure.2 Surprisingly, better language development was noted in English (second language) than Malayalam (first language).

**Figure 2**

PRIOR TO THERAPY	POST THERAPY
RLA: -10-11 months	RLA: - 24-27 months
ELA: - 5-6 months to 8-9 months (scattered)	ELA: - 22-24 months

These are the results of REELS, and it revealed a significant prognosis in receptive and expressive language skills following speech and language therapy alongside with reduced screen exposure.

**CONCLUSION:**

The case taken for our study showed significant improvement in speech and language skills owing to gradual reduction in screen time exposure along with increased speech and language stimulation. Prior to therapy the client communicated non verbally. Subsequently following therapy, an ascend in semantic vocabulary and socialisation were seen. To elucidate, incorporating increased play and verbal attention activities with family members along with reduction in screen time exposure brought about drastic progress in the performance of our client. Furthermore, total disappearance of stereotypic behaviours and improved attention skills were observed. Apart from that, there was a boom in client's attachment towards mother, successively owing to the increase in social interaction among family members that was subsumed in the space and duration, priorly expended on screen time exposure by the client. However, better language development was observed in English language than Malayalam language considering the fact that there was reduced input in mother tongue as the client was exposed more to English rhymes and stories during the span of increased screen exposure.

Poor quality of interactions with parents combined with excessive use of electronic screens may have negative effects on children's health and development.<sup>6</sup> Future investigations with larger sample size would lead to a better result to prioritize a prominent status for treatment approaches.

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