

Impact of Screen Time with Children 2-5 Years A Pilot Study

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Abstract

Screen Dependency Disorder or SDD refers to screen-related ‘addictive’ behavior. Sigman (2017) suggested that various screen activities that induce structural and functional brain plasticity in adults.

PURPOSE	The aim of the study was to find the impact of Screen time on children who were exposed for more than 2-3 hours per day by analyzing the working memory in children of 2-5years who had continuous expose to media for 2-5 and more hours per day.
METHOD	Ten children in the age range 2-5years who were exposed to mobile phones for more than 2-5 hours. The hours of exposure were calculated by instructing the caretakers one week prior and the recordings were taken. The Children were given with the tasks of CELF-5 during the recording hours and the responses of working memory were analyzed.
CONCLUSION	The results showed high significant difference in alphabets followed by months in comparison with other tasks.

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Introduction

Screen dependency disorder is a modern age health challenge for both kids and adults. Research proclaims that the excessive use of mobile phones and exposure to blue light have impact on children's brain which can lead to Screen Dependency Disorder (SDD). Children learn language through stimulation and environmental exposure during their critical period of development. American Academy of Pediatrics (AAP) recommends a maximum of one hour screen time a day for children from 2 to 5 years and babies below 18 months should avoid it altogether. Researchers have shown that excessive use of screen leads to sleep problems, weight loss, difficulties with communication, socialization, and brain development. In children, Screen Dependency Disorder or SDD refers to screen-related 'addictive' behavior. Sigman (2017) suggested that various screen activities that induce structural and functional brain plasticity in adults. The usage time in childhood with symbolize alter the anatomical structure of brain connectivity. Paulus, Ohmann, Gontard and Popow (2018) says that internet gaming disorder (IGD) is leading to and maintain pertinent personal and social impairment and suggested that the concept of internet gaming disorder(IGD) and the pathway leading to it are not entirely clear. Sarojini, Gayathri and Priya (2019) determined the awareness of SDD among IT professionals and suggest that SDD tend to experience a variety of symptoms. Digital natives exhibit a higher prevalence of screen-related 'addictive' behaviors that reflect impaired neurological reward-processing and impulse-control mechanisms. Since there is a scarcity of literature evidence to prove the high necessity to study in detail about the language impairment, brain functioning, and behavior changes caused due to SDD.

Need for the Study

The aim of the study was to find the impact of Screen time on children who were exposed for more than 2-3 hours per day by analyzing the working memory in children of 2-5years who had continuous expose to media for 2-5 and more hours per day.

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Methodology

Ten children in the age range 2-5years who were exposed to mobile phones for more than 2-5 hours. The hours of exposure were calculated by instructing the caretakers one week prior and the recordings were taken. The Children were given with the tasks of CELF-5 during the recording hours and the responses of working memory were statistically analyzed.

The parents were instructed to record the usage time of smart phone one week prior to analysis. The parents had recorded the usage time that is from the child start using the smart phone to the end time.

The clinician had provided activities to analyze the working memory of the child and the activities where alphabets, numbers, shapes, colours, shape and colours. Each activity consists of sufficient number of tasks. The maximum time slot allotted for each task is 2 minutes. The working memory with the above task were analysed in 10 children whose recording of smart phone usage were observed to be 2-5 hours a day. The analysis was done based on the time used to complete the task.

Results

TASK	RESPONSE		Total
	No	Yes	
ALPHABET SQ	7 70.0%	3 30.0%	10 100.0%
COLOURS	0 .0%	10 100.0%	10 100.0%
MONTHS	5 50.0%	5 50.0%	10 100.0%
NUMBERS	2 20.0%	8 80.0%	10 100.0%
SHAPES	5 50.0%	5 50.0%	10 100.0%
SHAPES+COLOUR	6 60.0%	4 40.0%	10 100.0%
Total	25 41.7%	35 58.3%	60 100.0%

Table 1.1 shows the responses from the children after 2 to 5 hours of media exposure.

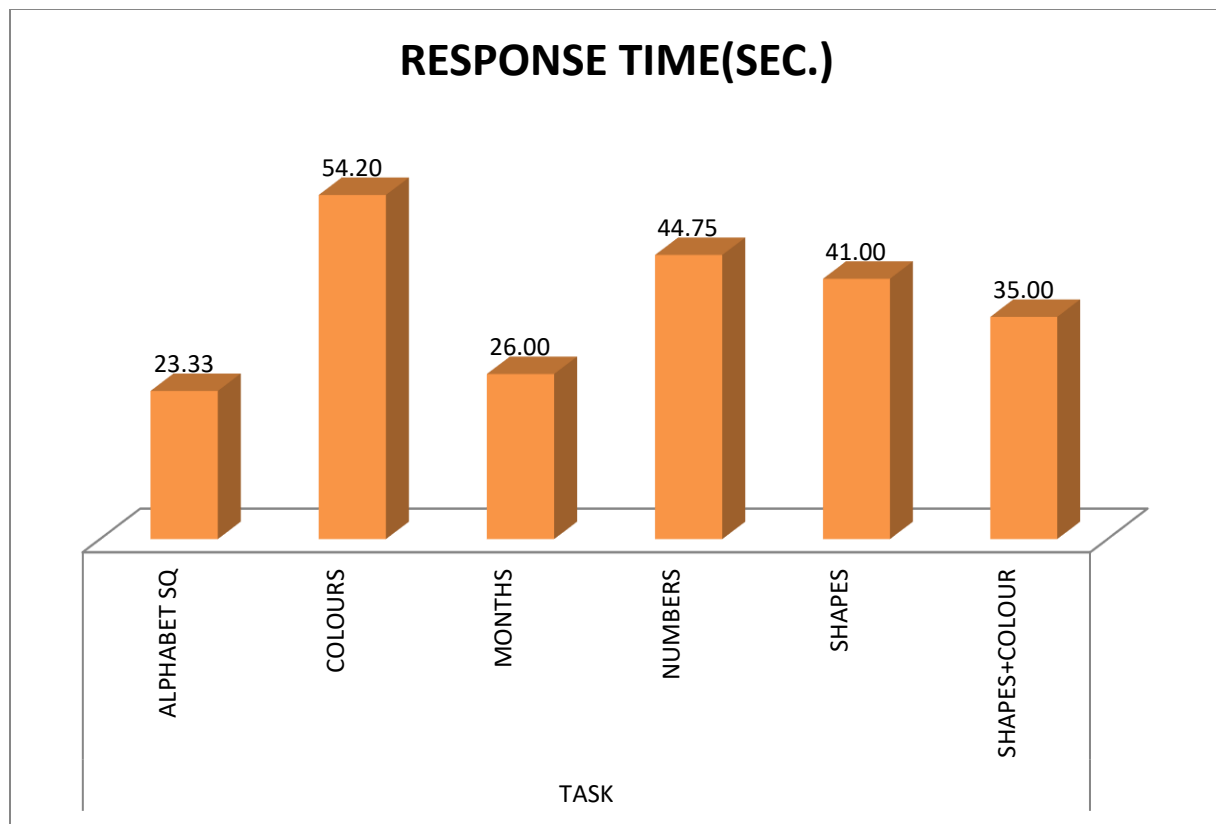


Figure 1.1 Depicts the responses in each task in working memory

From the above Table 1.1 it can be noted that children of 2-5 years under exposure of media (2-5 hours) presented with restricted responses in working memory tasks and exhibited with more reaction time in responding each tasks. It also gives clear evidence that responses in Colors and Numbers were better as compared to other tasks. The statistical results showed high significant difference in alphabets followed by months in comparison with other tasks.

Conclusion

Screen Dependency disorder refers to screen-related ‘addictive’ behavior. Excessive use of mobile phones and exposure to blue lights can impact your kid’s brain which can lead to a disorder called Screen Dependency Disorder (SDD). The above study can be concluded that there is an adverse effect in working memory over young developing children.

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