

MEDIA SCREEN TIME AND SPEECH DELAY: COMPARISON STUDY IN CHILDREN WITH AND WITHOUT SPEECH DELAY



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Introduction: Technologies are undeniably a part of our life. Impact of screen exposure including myopia & sleep disturbances have been documented. American Academy of Pediatrics, 2018 (1) stated that children less than 2 years old should be discouraged from any screen media exposure. Speech delay is associated with psychosocial problem and can lead to lower academic performances (2) and there is scarce local data on its association with screen time among children. The burden of this “silent” threat is painted in our future of increase disease burden of non-communicable diseases among population who are inactive and unemployed.

General Objective : To determine the association of screen time total duration between children with and without speech delay.

Specific Objective: 1. To determine the association of the age of first exposure to screen media among children with and without speech delay. 2. To ascertain an association between type of program, level of interaction and narration of the programs watched by the children with and without speech delay.

Methodology: Case control study involving 84 parents of 32 male and 10 female children among the speech delay children and equal number among parents with normal development children was conducted. Exposure to screen media over 24 hours, age of first exposure & type of program watched were explored through interviews with parents whom fulfilled the inclusion criteria.

Figure 1.1 Total Time Duration of Screen Media among Cases and Control

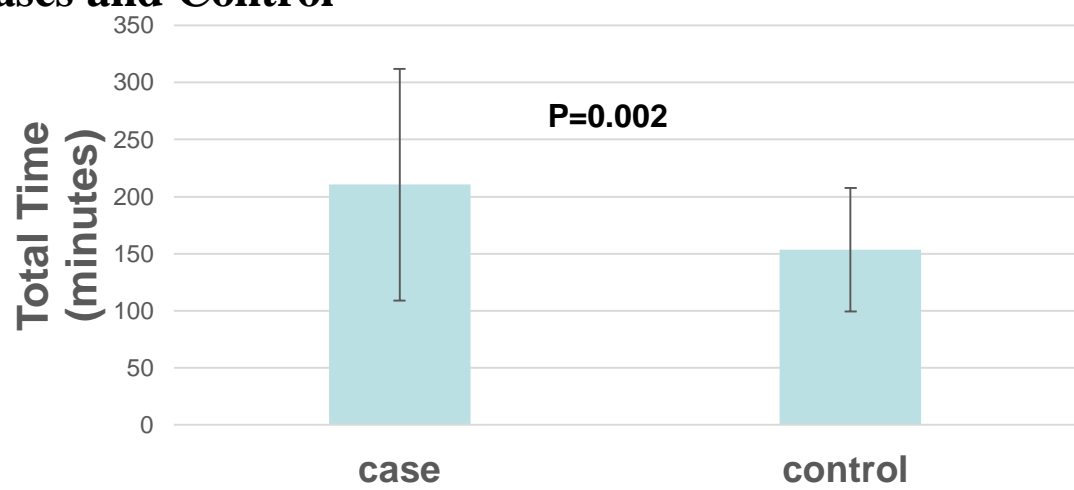


Table 1.1 Age (months) of First Exposure Towards Screen Media and Speech Delay

Variable	Group	Median	IQR	Z value	P Value
Age of first Exposure	Case	5.00	3.00	3.123	0.002
	Control	6.00	3.00		

Result

Table 1.2 Level of Narrative and Interactive of Top Screen Media Program Watched by Children and Speech Delay

Variables	Level	Case	Control	χ^2	pvalue value
Type of Program	Upin Ipin	9(21.4)	7(16.7)	5.83*	0.445
	Omar Hana	6(14.3)	6(14.3)		
	Didi & Friends	13(31)	17(40.5)		
	BabyTV	7(16.7)	2(4.8)		
	Dora The Explorer	2(4.8)	6(14.3)		
	Cocomelon	4(9.5)	3(7.1)		
	Unsure	1(2.4)	1(2.4)		
Program Interactive	High	2(4.8)	6(14.3)	2.351**	0.369
	Low	39(92.9)	35(83.3)		
Program Narrative	High	28(66.7)	37(88.1)	6.207***	0.028
	Low	13(31)	4(9.5)		

*Exact test was used as 8 cells (57.1%) have expected count less than 5 **Exact test was used as 4 cells (66.7%) have expected count less than 5***Exact test was used as 2 cells (33.3%) have expected count less than 5

Discussion:

- Our study involving children with median age of 3 years old showed that children with speech delay had significantly more time exposure to screen media compared to children with normal development ($t=3.206$, $P=0.002$) and concurred with several international studies(3)(4)(5).
- The age of first exposure for children with speech delay was significantly earlier than the age of exposure of children without speech delay ($Z=3.123$, $P=0.002$). This research shows that children in this study watches screen media at a far earlier age and alarmingly longer duration than the recommended time by AAP 2018.
- A panel of six experts were consulted and had determined the level of interactive and narrative of each of the top reported program. There were more programs that were categorized as low interactive among the speech delay group compared to the normal development group ($\chi^2=2.351$, $P=0.369$). Children among the speech delay group also watched less high narrative rated program compared to children among the normal development group ($\chi^2=6.207$, $P=0.028$).

Conclusion: There is a significant relationship between screen duration and speech delay. The age of first exposure and duration of screen time among children with speech delay in this study far exceeded the recommended duration of AAP 2018. The findings of this study which demonstrated an earlier exposure to screen and excessive screen time of more than the recommended hours calls for increased empirical study of the various effects of early screen media usage and the type of program children watch.

Recommendation:

- Assessment of screen media usage by amount and onset should be implemented in routine clinical history when assessing children with language development.
- There is lack of international consensus on time exposure to screens and this needs to be addressed. However, on the basis of AAP 2018, local guideline should be adopted especially with such alarming results obtained from this study.
- The possibility of primary prevention to unwarranted viewing should be explored. Targeting appropriate local development of children cartoon with high narrative and interactive content as well as usage of screen media at early life of children is warranted rather than focusing on secondary prevention with reduction of screen time at later on during a child’s life.

Limitation: The sample size of the study is considerably small and is homogenous with Malay families, hence generalizability to another group is not possible. Study design in particular the longitudinal or an experimental based with long term follow up would be of significantly beneficial design for the language development assessment.

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