447

BEHAVIOUR, DEVELOPMENTAL PROBLEMS AND FACTORS ASSOCIATED WITH EXCESSIVE SCREEN TIME IN CHILDREN LESS THAN 18 MONTHS OLD

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INTRODUCTION

- The use of screen devices among young children is rapidly increasing, despite no access to screen time being recommended for children below the age of two
- Numerous studies have highlighted the undesirable effects of excessive screen time on the developmental, psychosocial, and physical health of children
- An alarming 40% of infants less than 18 months of age were using screens for more than 2 hours each day

Guidelines:
AAP (Updated 2016): NO screen time below 18 months except for short video chatting
WHO (2019): NO screen time below 1

OBJECTIVE

To determine the risk for behaviour and developmental problems and factors associated with excessive usage of screen time in children at 18 months of age.

METHODS

- A cross-sectional study among the parents of children aged 18 months attending routine vaccination
- Data collected at 4 primary health clinics in Sepang
- Developmental Checklist and Baby Paediatric Symptom Checklist
- Screen time more than 1 hour is defined as excessive

RESULTS

A total of 254 study participants with a mean age of 18 months were included in the study. Out of 254 children, 134 (52.8%) were male, 39.8% were the eldest child and 91.3% of Malay ethnicity. More than half (66.1%) had screen time of less than one hour. Children that were cared in a mixed care environment showed 3.10 times more likelihood of excessive screen time. No significant association was found between screen time and risks for developmental and behaviour issues. We found a higher proportion of participants scored more than three on BPSC in those with more than one-hour screen time, however this was not significant.

Sociodemographic and environmental factors associated with excessive screen time

Variable	n	%	Screen time < 1 hour	Screen time ≥ 1 hour	p
Gender					
Male	134	52.8	87	47	.665
Female	120	47.2	81	39	
Birth order					
Eldest	101	39.8	62	39	.284
Middle	76	29.9	50	26	
Youngest	77	30.3	56	21	
Presence of other siblings					
No	81	31.9	48	33	.113
Yes	173	68.1	120	53	
Ethnicity					
Malays	232	91.3	155	77	.465
Non-Malays	22	8.7	13	9	
Presence of health issues					
No	244	96.4	162	82	.675
Yes	10	3.9	6	4	
Mother's age					
< 30 years old	99	39.0	66	33	.888
≥ 30 years old	155	61.0	102	53	
Marital status					
Single	8	3.1	4	4	.449*
Married	246	96.9	164	82	
Mother's educational status					
Low	76	29.9	53	23	.429
High	178	70.1	115	63	
Mother's occupational status					
Employed	158	62.2	105	53	.892
Unemployed	96	37.8	63	33	
Father's age					
< 30 years old	85	33.5	55	30	.732
≥ 30 years old	169	66.5	113	56	
Father's educational status					
Low	96	37.8	69	27	.132
High	158	62.2	99	59	
Father's occupational status					
Employed	252	99.2	166	86	.550*
Unemployed	2	.8	2	0	
Monthly household income					
< RM 2000	36	14.2	23	13	.863
RM 2001 -RM 5000	130	51.2	88	42	
> RM 5000	88	34.6	57	31	
Conversational language at home					
Malay	219	86.2	145	74	.954
Non-Malay	35	13.8	23	12	
Outdoor device					
No	100	39.4	62	38	.261
Yes	154	60.6	106	48	
Frequency of going out					
< 5 times	172	67.7	118	54	.230
≥ 5 times	82	32.3	50	32	
Weekly story reading					
< 3	151	59.4	100	51	.973
≥ 3	103	40.6	68	35	
Type of care provider					
Centre-based	58	22.8	40	18	.157
Home-based	127	50.0	84	43	
Mixed	15	5.9	6	9	
None	54	21.3	38	16	

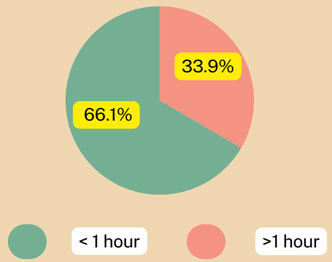
Note: *Fisher-exact tests

Multiple Factors Predicting Excessive Screen Time

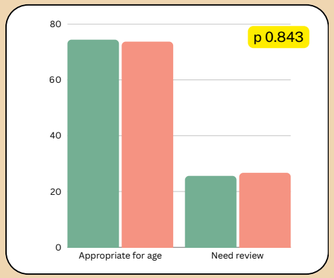
Variable	aOR	95 % CI LL	95 % CI UL	p
Birth order				
Eldest	*	*	*	*
Middle	1.12	0.44	2.87	.812
Youngest	0.86	0.33	2.22	.755
Presence of other siblings (yes)	0.68	0.27	1.69	.403
Marital status				
Single	*	*	*	*
Married	0.48	0.11	2.06	.322
Father's educational status				
Low	*	*	*	*
High	1.54	0.87	2.74	.140
Outdoor device (yes)	1.28	0.74	2.22	.384
Frequency of going out				
< 5 times	*	*	*	*
≥ 5 times	1.25	0.69	2.25	.464
Type of care provider				
Mixed	3.10	1.01	9.48	.048

Note: * Reference group
aOR – adjusted odds ratio; CI – confidence interval; LL – lower limit; UL - upper limit

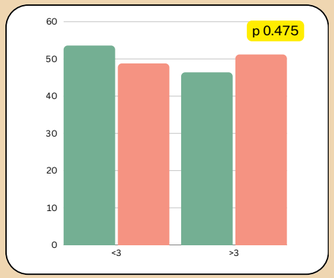
Screen Time Usage Among the Study Particpants



Association between excessive screen time with risk for development issues



Association between excessive screen time with risk for behaviour issues



DISCUSSION

Our study found 33.9% of young children were engaged in excessive screen time. This is comparable to the findings from our neighbouring Singapore which showed 37.2% of children below age of two years had up to two hours of total screen timer per day. One significant predictor that we found was mixed care providers, which showed 3.10 times likelihood of excessive screen time. Non-parental caregivers may perceive screen time as educational and engaging. Parental influences are crucial especially in setting screen time rules which has resulted in less screen time as found in previous studies. At the same time non-parental or center-based care should commit to evidence-based screen time rules. We did not find significant associations between screen time and risk for behaviour and developmental problems. This could be explained by the cross-sectional nature of the study, and the tool utilised was only a screening method that is answered by the caregivers that could lead to recall bias.

CONCLUSION

Our study is the first in this locality that attempted to evaluate risks for developmental and behaviours issues in relation to excessive screen time. One third of our study population were engaged in excessive screen time, and a substantial proportion of them had a higher BPSC score. Further studies including longitudinal studies are recommended in order to have greater understanding on the correlates across all age groups and to determine effective screen time strategies.

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