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Screen Media Addiction And Behavioural Problems Among Pre-Schoolers In Selected Pre– Primary Schools In Aryad Block, Alappuzha

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Abstract:
The present study was intended to assess screen media addiction and behavioural problems among pre-schoolers in selected pre-primary schools in Aryad block, Alappuzha. The objectives of the study were to assess the screen media addiction and behavioural problems among pre-schoolers, to determine the correlation between screen media addiction and behavioural problems and to determine the association of screen media addiction and behavioural problems with selected socio personal variables. The conceptual framework was based on the Health Promotion Model by Nola J Pender. A descriptive cross-sectional research design was adopted. Sample consisted of 224 pre-schoolers belonging to age group of 4-6 years from four pre-primary schools were selected by multistage cluster sampling. Mothers completed the socio personal data sheet, Problematic Media Use Measure Scale (PMUM) and Child behaviour problem assessment checklist by self-report. The results indicated that 18.3% of pre- schoolers were having screen media addiction and 61.7% pre-schoolers were having mild behavioural problems and 62.9% pre-schoolers had mild body related behavioural problems. There was significant moderate positive correlation (+.59) between screen media addiction and behavioural problems among pre-schoolers. There was significant association between screen media addiction and socio personal variables including education of mother, education of father, occupation of father monthly family income, age at first exposure to screen media, use of screen media at weekends, use at bed time, screen time of mother and duration of daily screentime of father. There was significant association between behavioural problems and age at first exposure to screen media and use of screen media at weekends. The study concluded that excessive duration of media use negatively affects early child development and causes behavioural problems.

Key Word: *Screen media addiction, Behavioural problems, Pre-schoolers*

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I. Introduction

The time that children spend using digital devices is increasing rapidly with the development of new portable and instantly accessible technology, such as smartphones and digital tablets. The prevalence trend of digital addiction increases over time. The global prevalence in general population was 26.99% for smart phone addiction,14.2% for internet addiction and 6.04 % for game addiction.[1] Indian Academy of Paediatrics published the findings of a review of 14 cross sectional studies conducted worldwide from 2009 to 2018. It was reported that the burden of screen time among children varies from 21- 98% in the middle-income countries and 10 -93.7 % in the high-income countries.[2]

Due to the effect of COVID-19 pandemic in 2020, nearly all children aged 5-15 years went online. Laptops, tablet, and mobile were the most used devices for going online.[3] Excessive screen exposure among children has been associated with negative outcomes in neurodevelopment, learning, memory, and mental health.[4]

A study to assess the association between mobile technology use and child adjustment in early elementary school age showed that 14% were regular users (60 minutes or more on a typical day) and 86 % were non-regular users (under 60 minutes on a typical day). Relative to non-regular use, regular use of mobile devices was significantly linked to conduct problems (OR: 1.77, 95% CI: [1.03–3.04]) and hyperactivity/ inattention (OR: 1.82, 95% CI: [1.15–2.87]).[5]

A cross sectional study conducted in Turkey to evaluate problematic screen exposure in preschoolers using seven- in- seven exposure questionnaire showed that 22.5% of children had problematic screen exposure.[6]

A cross sectional study conducted in Uttar Pradesh, India on prevalence and consequences of screen time on physical and mental health in children in the era of COVID -19 showed that more than one third of

children had onset of screen time below the age of 2 years. Screen had negative impact on heath and behavior of the child.[3] In India less number of studies are conducted related to screen media addiction among preschoolers. The current study aimed to assess the screen media addiction and behavioural problems.

II. Objectives

1. To assess the screen media addiction among pre-schoolers in Aryad block.
2. To assess the behavioural problems among pre-schoolers in Aryad block.
3. To determine the correlation between screen media addiction and behavioural problems among pre- schoolers.
4. To determine the association between screen media addiction and selected socio personal variables among pre-schoolers.
5. To determine the association between behavioural problems and selected socio personal variables among pre-schoolers

III. Material And Methods

This descriptive cross-sectional study was carried out on pre-schoolers of selected pre-primary schools in Aryad block, Alappuzha district from July 2023 to September 2023. A total 224 pre-schoolers (both male and females) aged 4-6 years were selected for the study.

Study Design: Descriptive cross-sectional research design.

Study Location: The study was conducted in selected pre-primary schools in Aryad block which include Panchayat LP School, Kavungal, CMS LP School, Muhamma, Vidhyanikethan English Medium School, Kalavoor and Government Azad UP School, Kayipuram.

Study Duration: July 2023 to September 2023

Sample size: 224 pre-schoolers

Sample size calculation: Sample size is calculated based on a study done in Tamil Nadu to find the association between media exposure and addiction with child development and behaviour in 2021 among children between 18 months and 12 years. The prevalence was found to be 40.1%**.**[7]The sample size actually obtained for this study was 149 pre-schoolers. The sample size was calculated as 224 pre-schoolers after considering the cluster effect of 1.5.

Subjects & selection method: The study population was drawn from two panchayats using simple random sampling from four grama panchayats in Aryad block. Pre-primary schools were selected by using multistage cluster sampling technique, Mararikulam grama panchayat and Aryad grama panchayat were the selected panchayats. Two pre-primary schools were selected from each panchayat- two government/aided schools and two unaided schools. So, a total of four pre-primary schools were selected from two panchayats. Fourteen pre-schoolers from LKG, Fourteen from UKG and twenty-eight from 1st standard who fulfil the sampling criteria were selected from each school. Thus, a total of 224 children were selected from the 4 schools.

Inclusion criteria:

Pre-schoolers in the age group of 4 - 6 years attending pre-primary schools
- whose mothers are able to read and comprehend Malayalam
- who have access to any of the screen media namely Television, smartphone, laptop, computer, videogame player or tablet.

Exclusion criteria:

Pre-schoolers in the age group of 4- 6 years attending pre-primary schools
- whose mothers are not willing to participate in the study.
- who are diagnosed with behavioural problems

Procedure methodology

The investigator met the mothers of pre-schoolers at pre-primary school, when they arrived there to leave the child in morning or takeback the child in the evening. Mothers were seated comfortably. The purpose of the study was explained to them. The participant information sheet was provided and informed consent was obtained from them. The socio personal data of child were collected by using the Socio personal data sheet. The Problematic Media Use Measure to assess the screen media addiction and Child behavioral problem checklist to

assess behavioral problems were administered to mothers. It took around 30-40 minutes to complete all the tools.

Screen media addiction was analysed using Problematic Media Use Measure Scale (PMUM). PMUM Scale is a parent report measure of screen media addiction among children between the age group of 4-13 years. Based on this scale children are categorized into two <81-No screen media addiction(absent) and score of ≥82 - Have screen media addiction (present).

Behavioural problems were analysed using Child behaviour problem assessment checklist. This is a checklist prepared by the researcher which contains 28 items used to assess the behavioural problems among pre- schoolers. The 28 items were categorized as body related behavioural problems, sleep related behavioural problems, attention related behavioural problems and aggression related behavioural problems. Behavioural problems were categorized as no behavioural problems (0), mild behavioural problems (1-18) , moderate behavioural problems (19- 37) and severe behavioural problems (38-56).

Statistical analysis

Data were analyzed using appropriate statistical packages. Screen media addiction was analyzed by using frequency, percentage, mean and standard deviation. Behavioral problems were analyzed by using frequency and percentage. Correlation between screen media addiction and behavioral problems was analyzed by computing Karl Pearson's correlation coefficient. Association between screen media addiction and socio personal variables were analyzed by Chi square test. Association between behavioral problems and socio personal variables were analyzed by Chi square test. The level $p < 0.05$ was considered as the cutoff value or significance.

IV. Results

Table no 1: Frequency and Percentage distribution of Socio personal Variables (n= 224)

Sl.No	Socio personal variables	Category	Frequency	Percentage
1.	Age (in years)	4	97	43.3
		5	106	47.3
		6	21	9.4
2.	Sex	Boys	101	45.1
		Girls	123	54.9
3.	Education of mother	Professional degree	28	12.5
		Graduate	96	42.9
		Intermediate/diploma	33	14.7
		High school	53	23.7
		Middle school	2	0.9
		Primary school	12	5.3
4.	Monthly family income (in rupees)	30831-123322	55	24.6
		18497 – 30830	47	21
		6175 – 18496	73	32.6
		< 6174	49	21.8
5.	Child age at first exposure to screen media (in years)	1	49	21.9
		2	62	27.7
		3	86	38.4
		4	25	11.2
		>4	2	0.8
6.	Use of screen media on weekends	Decreases	84	37.5
		Same as on weekdays	90	40.2
		Increases	50	22.3
7.	Duration of daily screen time of mother (in hours)	<2	128	57.1
		>2	96	42.9

Table no 2: Frequency distribution and percentage of pre-schoolers based on screen media addiction

Screen media addiction	Score	f	%
Present	≥ 81	41	18.3
Absent	< 81	183	81.7

Table 2 depicts that 18.3% pre-schoolers were having screen media addiction.
Mean score of the screen media addiction was 47.74 with standard deviation of 21.31.

Table no 3: Frequency distribution and percentage of pre-schoolers based on behavioural problems

Behavioural problems		f	%
No behavioural problems	(0)	18	8

Mild behavioural problems	(1-18)	138	61.7
Moderate behavioural problems	(19-37)	67	29.9
Severe behavioural problems	(38-56)	1	0.4

Table 3 shows that 61.7% of pre-schoolers were included in the category of mild behavioural problems. Mean score of the behavioural problems was 13.02 with standard deviation of 9.13.

Behavioural problems were categorized as body related behavioural problems, sleep related behavioural problems, attention related behavioural problems and aggression related behavioural problems.

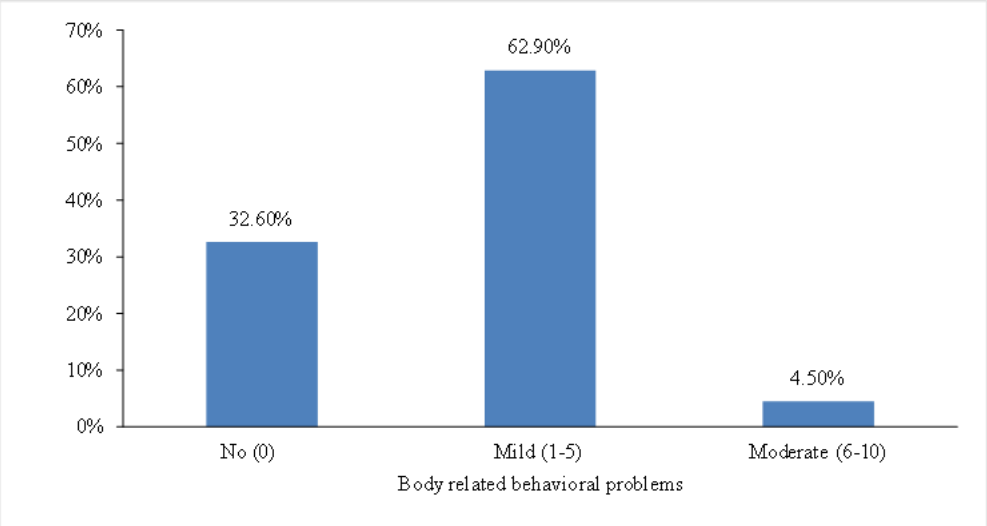

Figure 1: Percentage distribution of pre-schoolers based on body related behavioural problems

Figure 1 depicts that 62.9% of pre-schoolers had mild body related behavioural problems.

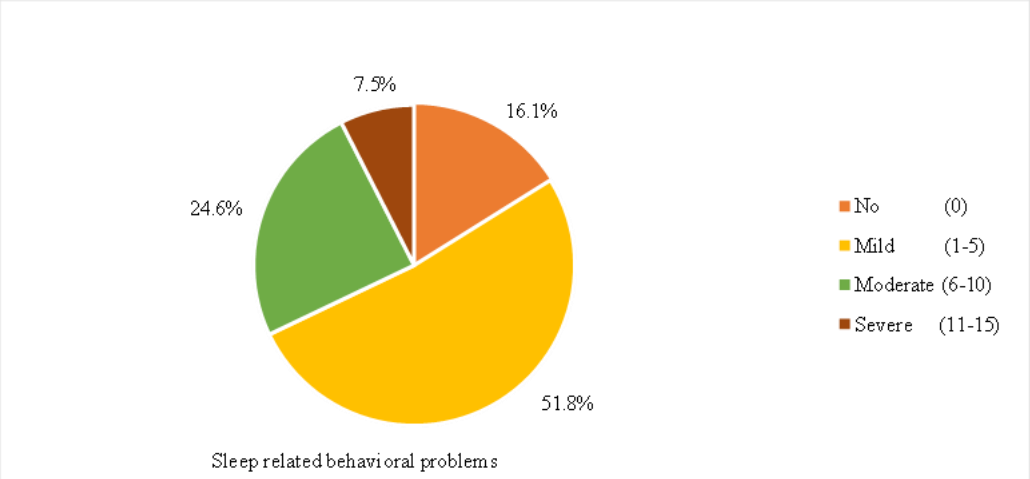

Figure 2: Percentage distribution of pre-schoolers based on sleep related behavioural problems

From figure 2, it is inferred that 51.8% of pre-schoolers had mild sleep related behavioural problems.

Table no 4: Frequency distribution and percentage of pre-schoolers based on attention related behavioural problems

Attention related behavioural problems	f	%
No (0)	65	29.0
Mild (1-5)	137	61.2
Moderate (6-10)	21	9.4
Severe (11-15)	1	0.4

Table 4 reveals that 61.2% of pre-schoolers had mild attention related behavioural problems.

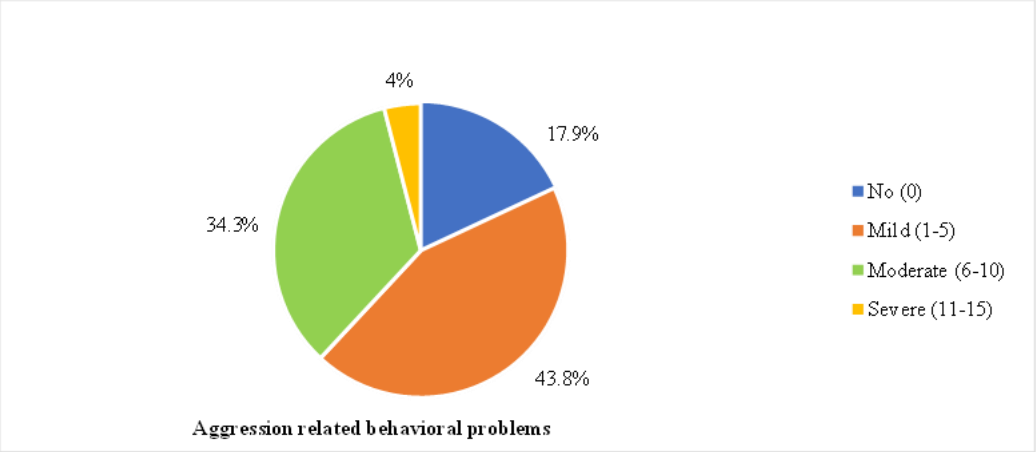

Figure 3: Percentage distribution of pre-schoolers based on aggression related behavioural problems

Figure 3 shows that 43.8% of pre-schoolers had mild aggression related behavioural problems.

Table no 5: Correlation between screen media addiction and behavioural problems among pre-schoolers

Variables	*r*	p
Screen media addiction Behavioural problems	+.59***	0.0001

***Significant at 0.001 level

From table 5, it can be seen that there was moderate positive correlation (+.59). As the scores of screen media addiction increases the scores of behavioural problems also increases. Hence as screen media addiction occurs behavioural problems are observed among pre-schoolers. This correlation was statistically significant at 0.001 level.

There was significant association between screen media addiction pre-schoolers and socio personal variables including education of mother, education of father, occupation of father, monthly family income, age at first exposure to screen media, use of screen media at weekends, use at bed time, screen duration of daily screen time of mother and duration of daily screen time of father. But there was no significant association between screen media addiction and other socio personal variables.

There was significant association between behavioural problems and age at first exposure to screen media and use of screen media at weekends. But there was no significant association between behavioural problems and other socio personal variables.

V. Discussion

The present study was intended to find out the correlation between screen media addiction and behavioural problems among pre-schoolers in selected pre-primary schools in Aryad block. It was evident from the literature review that correlation exists between screen media addiction and behavioural problems. The present study findings also supported the findings of the previous studies.

In the current study 54.9% of pre-schoolers were girls and 45.1% were boys. In a cross-sectional study conducted in Thiruvananthapuram, Kerala on a hospital-based study about mobile phone addiction among children aged 5-12 years, among them 56.3% were boys and 43.7% were girls.[8] The gender ratio in the previous study was similar to the present study finding.

The current study finding showed that 18.3% pre-schoolers were having screen media addiction. A study conducted in Chennai regarding association of digital media exposure and addiction with child development and behavioural among children between 18 months and 5 years revealed that 28.1% had screen media addiction.[7] It was comparatively similar to the present study finding. A cross sectional study conducted in Gujarat, India about screen time usage among preschoolers aged 2-6 years showed that 80% had screen media addiction.[9] A very high percentage of children had screen media addiction compared to present study. Present study finding was again incongruent with the study finding of another study to find prevalence and determinants of excessive screen time among children under five years in Selangor, Malaysia which showed that 91.4% had screen media addiction.[10] In the present study 90% of pre-schoolers had behavioural problems (Mild, moderate and severe). A descriptive study was conducted to assess the behavioural problems among preschool children at selected anganwadi centers of Roopnagar, Punjab which revealed that 21% of children had behavioural problems.[11] The study finding not consistent with present study finding.

In the present study 61.7% of pre-schoolers had mild behavioural problems. A comparative study to assess behavioural problems in preschoolers from a selected Urban Community in Thrissur, Kerala showed that 83.5% had mild behavioural problems.[12] The study finding was not consistent with present study finding.

Present study revealed that 29.9% of pre-schoolers had moderate behavioural problems. A study done in Thrissur revealed that 8.5% had moderate behavioural problems.[12] The study finding not consistent with present study finding.

The findings of the present study revealed that there was moderate positive correlation (+.59) between screen media addiction and behavioural problems among pre-schoolers. A study conducted in Thiruvalla, Kerala to find out the association of screen time with parent-reported cognitive delay in preschool children, revealed that those children with inconsistently supervised screen time were significantly more likely to have suspected deficits in attention, intelligence, and social skills.[13]

A cross sectional study conducted in Chennai about association of digital media exposure and addiction with child development and behaviour showed that children with average daily screen time of less than two hours had lesser chance of having concerns in the communication domain and those with average daily screen time of greater than two hours had more chance of affective problems in the under five age group.[7] Similarly, a study conducted in Egypt showed that duration of media exposure was significantly and positively correlated to the hyperactivity (r = .372).[14] All these previous study findings are in agreement with the findings of the present study findings.

VI. Conclusion

Screen media addiction among children should be included as a part of routine health assessment of children, particularly pre-schoolers. This helps to curtail unhealthy digital media practices at the earliest to ensure safe digital environment for children.

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