



Subject Area : Community Health Nursing

EXPLORING THE FACTORS CONTRIBUTING TO VIRTUAL AUTISM AMONG CHILDREN ATTENDING SELECTED HEALTH CENTRES, KOTTAYAM

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ARTICLE INFO	ABSTRACT
Received 15 th March, 2025 Received in revised form 27 th March, 2025 Accepted 18 th April, 2026 Published online 28 th April, 2026	“Virtual autism” is the development of autism-like symptoms in children due to excessive exposure to digital devices and screen time. Objective: To associate the identified factors with the ASD score of the children Methods: A cross-sectional survey design was used to conduct the study among 100 care givers of children accompanying them to the selected health centres, Kottayam. Non probability convenient sampling technique was used to select the samples. A self- structured questionnaire was used to collect data on factors contributing to virtual autism and Trivandrum Autism Behaviour Checklist was used to assess the ASD in children. Results: in the present study, 31 % of children were having mild to moderate autism and 2% were having severe autism. The factors such as family structure ($p<0.001$), occupational status of mother ($p<0.001$), screen time per day by the child ($p<0.001$), type of digital device used ($p<0.05$), content consumed ($p<0.005$), duration of parent child interaction ($p<0.001$) were having significant association with ASD in children. Conclusion: increased awareness regarding virtual autism is required to control the factors contributing to its occurrence in children.
Key words: Factors Contributing, Virtual Autism Spectrum Disorder	
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INTRODUCTION

Virtual autism refers to a set of autistic-like behaviours in children such as, speech delays, lack of eye contact, and social withdrawal caused by excessive screen time rather than congenital brain issues. (1) It was estimated that, 10% to 30% of children under the age of five diagnosed with developmental delays may exhibit «Virtual Autism». Recent reports suggested that, up to 60% of new autism-like cases in urban centres may be linked to screen overuse. (2)

A few studies were conducted in Saudi Arabia to identify the most used devices and determine the exposure to these devices. The most used devices are the television, followed by mobile phones and tablets then followed by Computers. The children use electronic devices for >4 hours per day. Moreover, there is another study that shows that smartphones are the most common devices used by children (mean usage of 28.5 ± 27 hours per week), followed by tablets (7.5 ± 15 hours per week) and laptops (3 ± 7.4 hours per week). The median duration of use of all the devices together was 35 hours per week. (3)

This study aims to explore the factors contributing to virtual autism among children to prevent its occurrence.

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METHODS

A cross-sectional survey design was adopted by the researcher to conduct the study among 100 care givers of children (between the age group of 2-6 years) attending the selected health centres, Kottayam. The sampling technique used was non-probability convenient sampling technique. The tool used for collecting the data consists of a self-structured questionnaire to collect the demographic data and factors contributing to virtual autism & Trivandrum Autism Behaviour Checklist, a standardized tool to assess the autism spectrum diseases. After getting the ethical clearance & informed consent the tool was administered to the participants. The scoring of the TAB checklist was taken as < 35: No Autism, 36 – 43: Mild to Moderate Autism, 44 and above: Severe Autism. The participants took about 15 minutes to mark their responses. The tools were collected back & active participation of all samples were ensured. The data obtained were analysed using descriptive & inferential statistics.

RESULT

In this study, 100 participants were assessed to explore the contributing factors of virtual autism among children.

Table 1. Frequency & percentage distribution of samples based on the demographic data

Sl No	Demographic Variable	Frequency	Percentage
1.	Age of the care giver in years		
	20-29	38	38
	30-39	24	24
	40-49	32	32
	≥50	6	6
2.	Gender of the care giver		
	Male	14	14
	Female	86	86
3.	Age of the child in years		
	2 years	28	28
	3 years	42	42
	4 years	18	18
	5 years	5	5
	6 years	7	7
	Gender of the child		
4.	Girl	44	44
	Boy	56	56
5.	Previous information about virtual autism		
	Yes	23	23
	No	77	77
6.	Relation of care giver to the child		
	Mother	48	48
	Father	19	19
	Grandmother/Grandfather	31	31
	Others	2	2

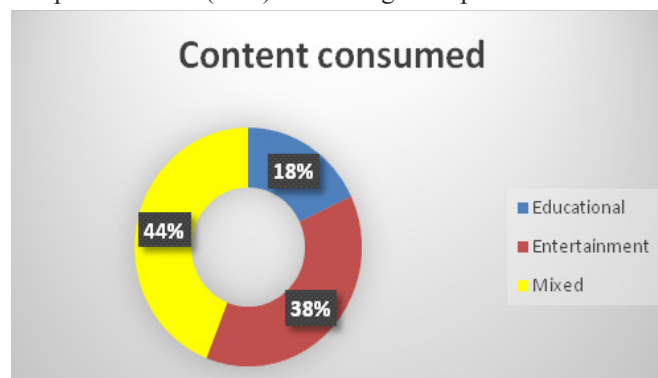
Inference: the table 1 shows that, most of the samples (38%) belongs to the age group of 20-29 years, most of them are females (86%), most of the children (42%) belongs to the age group of 3 years, most of the children (56%) were boys, most of the samples (77%) not having any previous information about virtual autism, most of the children (48%) were cared by their own mother.

Table 2. Distribution of samples based on the factors contributing to virtual autism

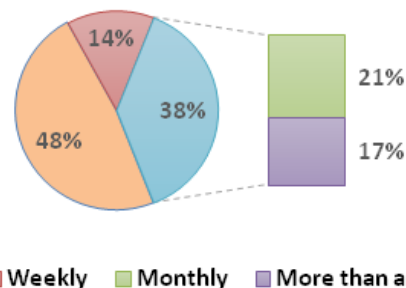
SL No	Demographic Variable	Frequency	Percentage
1.	Family structure		
	Nuclear	58	58
	Joint	42	42
2.	Educational status of mother		
	Upper primary	8	8
	High school	16	16
	Higher secondary	24	24
	Degree & above	52	52

3.	Occupational status of mother		
	Employed	48	48
	Un employed	52	52
4.	Family history of autism spectrum disease		
	Yes	12	12
	No	88	88
5.	Screen time per day		
	<1 hr	37	37
	1-3 hr	33	33
	>3 hr	30	30
6.	Type of digital device used		
	Smart TV	36	36
	Smart phone	52	52
	Tablet	12	12

Inference: the table 2 shows that, most of the samples (58%) belongs to nuclear family, most of them (52%) were have degree & above educational status, most of the mothers (52%) were unemployed, most of the samples (88%) were not have the family history of autism, most of the samples' children (37%) were have screen time of <1 hour per day, most of the samples' children (52%) were using smartphone.

**Figure 1.** Distribution of samples based on the content consumed

Inference: the pie diagram shows that, most of the samples' children (44%) were using digital device for mixed purpose

Duration of Interaction**Figure 2.** Distribution of samples based on the duration of parent child interaction

Inference: the pie diagram shows that, most of the samples' children (48%) were have daily interaction with parent.

SL No	Contributing factor	Presence of ASD		Total	x2 value	df	p value
1.	Family structure	Present	Absent		11.29	1	0.001
	Nuclear	28	44	58			
	Joint	5	23	42			
2.	Educational Status of Mother	Present	Absent	Total	1.1025	3	0.001
	Upper primary	2	6	8			
	High school	7	9	16			
	Higher secondary	8	16	24			
	Degree & above	16	36	52			
3.	Occupational Status of mother	Present	Absent	Total	15.09	1	0.001
	Employed	25	23	48			
	Unemployed	8	44	52			
4.	Family history of autism spectrum disease	Present	Absent	Total	3.95	1	0.001
	Yes	7	5	12			
	No	26	62	88			
5.	Screen time per day	Present	Absent	Total	16.34	2	0.001
	<3 hr	5	32	37			
	1-3 hr	10	23	33			
	>3 hr	18	12	30			
6.	Type of digital device used	Present	Absent	Total	6.69	2	0.05
	Smart TV	6	30	36			
	Smart phone	22	30	52			
	Tablet	5	7	12			
7.	Content consumed	Present	Absent	Total	12.407	2	0.005
	Educational	6	12	18			
	Entertainment	20	18	38			
	Mixed	7	37	44			
8.	Duration of parent child interaction	Present	Absent	Total	24.4415	3	0.001
	Daily	5	43	48			
	Weekly	6	8	14			
	Monthly	10	11	21			

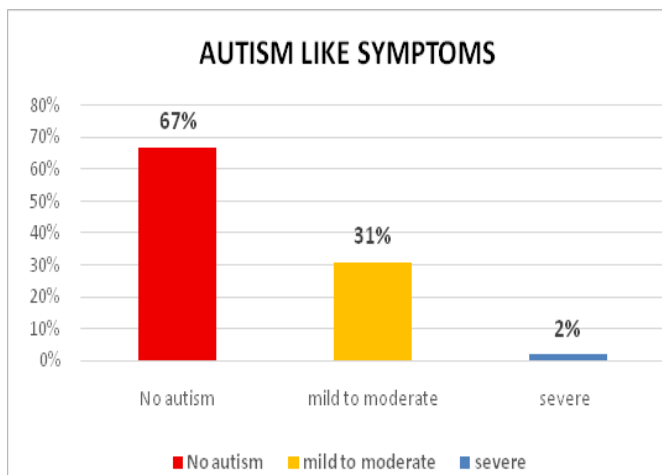


Figure 3. Distribution of samples based on the presence of autism- like symptoms

Inference: The figure 3 shows that, most of the samples' children (67%) were not having autism- like symptoms.

Inference: the table 3 shows that, factors such as Family structure, Occupational Status of mother, Screen time per day, Type of digital device used, Content consumed and Duration of parent child interaction were significantly associated with ASD score of the child. Educational Status of Mother & Family history of autism spectrum disease were not significantly associated with ASD score of the child.

DISCUSSION

In the current study conducted among 100 care givers of children (between the age group of 2-6 years) attending the selected health centres, Kottayam to explore the factors contributing to virtual autism among children, the researcher identified that, among the 100 samples, 31 % of the sample's children were having mild to moderate autism and 2% were having severe

autism. There is a significant association between the factors such as Family structure ($p<0.001$), Occupational Status of mother ($p<0.001$), Screen time per day ($p<0.001$), Type of digital device used ($p<0.05$), Content consumed ($p<0.005$) and Duration of parent child interaction ($p<0.001$) and ASD score of the child. Educational Status of Mother & Family history of autism spectrum disease were not significantly associated with ASD score of the child.

A case-control study was conducted in 2025 among 240 children aged 1-4 years (120 cases with autism-like symptoms, 120 controls) examining screen time patterns, parent-child interaction, and developmental outcomes at pediatric clinics and early intervention centers in urban and suburban areas of a large metropolitan region. A convenience sampling method was used to recruit participants from three age groups. The results of the study show that, case group showed significantly higher daily screen time (148.5 ± 67.3 vs. 92.4 ± 45.6 minutes, $p<0.001$) and lower parent-child interaction time (74.6 ± 38.2 vs. 128.4 ± 51.7 minutes, $p<0.001$). Logistic regression revealed increased risk with higher screen time (OR=1.02, 95% CI: 1.01-1.03) and lower parent-child interaction quality (OR=0.41, 95% CI: 0.29-0.57). Parent-child interaction quality significantly moderated screen time effects (interaction term OR=0.99, $p=0.022$). The study concluded that, there is an association between excessive screen exposure and autism-like symptoms, highlighting parent-child interaction's protective role. (4)

In the present study, 58% of the samples belongs to nuclear family, most of them (52%) were have degree & above educational status, most of the mothers, (52%) were unemployed, most of the samples (88%) were not have the family history of autism, 37% were have screen time of <1 hour per day, most of the samples' children (52%) were using smartphone, 44% were using digital device for mixed purpose and 48% were have daily interaction with parent.

CONCLUSION

This study has shown that there is a significant association between daily hours spent on devices especially three hours and more and ASD score >35, which may suggest a possible ASD-like symptoms. The study reveals that increased screen time exposure, particularly in the absence of quality parent-child interactions, is associated with higher risk of developmental concerns. More longitudinal research studies focus on establishing causal relationships and evaluating the effectiveness of targeted interventions in mitigating screen-related developmental risks are required in future.

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