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Virtual Autism: A Psychoeducational Exploration

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Abstract: Virtual autism is a term used to describe a phenomenon where children show signs and symptoms of autism spectrum disorder as a result of excessive exposure to screen time (e.g., television, computers, smartphones, tablets) at a very young age. Under this due to lack of environmental stimulation and social interactions the child often starts showing certain symptoms like reduced cognitive functioning, delayed language development, behaviours like those of autistic children, such as hyperactivity, short attention span, irritability and repetitive behaviours, lack of empathy or emotional expression, reduced engagement with the environment, and oversensitivity with certain noises, lights or texture as this can often interfere with brain's ability to process or ignore certain sensory stimuli. The study aimed to analyse the awareness of virtual autism among the parents. A group of 25 parents with children aged 0 to 6 years were given a list of 25 questions, and the results showed that parents have some awareness, but gaps remain in understanding its cause, effects, and preventive measures. The study underscores the need for targeted psychoeducation.

Keywords: *Excessive Screen Exposure, Virtual Autism, Early Childhood Development, Autism- Like Symptoms, Psychoeducation, Parental Knowledge Gaps.*

1. Introduction

Autism spectrum disorder is referred to as a Heterogeneous Neurodevelopmental Disorder, including a wide range of problematic behaviors such as communication, socialization and motor development. It is a condition related to brain development that

impacts how a person perceives and socializes with others, also includes repetitive patterns of behavior. The term "spectrum" is used because the condition can vary greatly in its severity and in the types of symptoms a person experiences. Some individuals with ASD may have mild challenges, while others might face more significant difficulties. The onset of autistic disorder is 3 years, although in some cases it is not recognized until the child is much older. It is 4 to 5 times more frequent in boys than in girls.

On the other side the Virtual Autism is a term used to describe a phenomenon where children show signs and symptoms of ASD as a result of excessive exposure to screen time (e.g., television, computers, smartphones, tablets) and digital media at a very young age. This condition is not officially recognized as a distinct medical diagnosis, but it refers to the observation that excessive screen time, particularly in early childhood, might contribute to certain behaviours associated with autism. The signs and symptoms under this condition includes impaired social skills, language and communication delays, reduced physical activity, sleep problems, attention difficulties and emotional and behavioural issues (Garg et al., 2024). Chen et al. (2020) found that “younger initial age, longer daily screen time and longer cumulative years of screen exposure since birth were associated with the presence of autistic- like behaviours at preschool age. The risk was enhanced with the increase of both daily screen time and cumulative years of screen exposure during preschool period. Moreover, the cross- over analysis indicated that the first three years following birth might be a sensitive period for children when screen exposure increases the risk of experiencing autistic-like behaviours.”

The initial and most favourable treatment under this case is a reduction in the screen time that is no more than 1 hour per day for the children aged 2 to 5 years, as per the American Academy of Pediatrics (AAP). Other than this, the treatment of choice may be parental support and guidance, promoting real-life interactions and therapies such as speech therapy, behavioural therapy, and occupational therapy proves to be more beneficial. This can help the child recover from these symptoms and thrive in their development. Garg et al. (2024) found that “preventing virtual autism requires a holistic approach involving parents, educators, and policymakers. Key steps include setting screen time limits, selecting age-appropriate content, promoting physical activity, nurturing in-person relationships, and teaching digital literacy.

The key differences between these two conditions are that the symptoms of ASD typically appear in the first few years of life and are present long before the child is exposed to excessive screen time; however, Virtual autism may develop after prolonged screen

exposure. The primary cause of ASD is still not fully understood but is believed to involve genetic and neurological factors, whereas in Virtual autism, the environmental factor (i.e., excessive screen time) plays the major role. The ASD cannot be fully cured; however, with early interventions and certain therapies, the overall quality of life can be improved, whereas in the case of Virtual autism, the effects are reversible with the use of appropriate interventions, especially by reducing screen exposure and focusing more on socialization.

Psychoeducation refers to the process of providing information to individuals regarding the psychological condition, its causes, or effects as to help them better understand, manage, and cope with it. In case of virtual autism, this includes teaching parents about the side effects of excessive screen exposure on the child's development and providing guidance on reducing the screen exposure and promoting social interaction by offering them strategies to enhance cognitive and emotional development in children.

A study conducted by Kumaraswamy and Binoe (2022) found that around 80% of parents are aware that they should have to spend time talking to their kids. About 18 % of parents said that their kids are addicted to screens. About 12% of parents have heard about the term “virtual autism” and 88% thought that it was a type of autism. So, overall, the results showed that parents have reasonable awareness about this condition. Limited parental awareness may contribute to delayed intervention, leading to prolonged developmental challenges in children. This study investigates the extent of parental knowledge regarding virtual autism.

1.1 Aim

The aim of the present study is to assess parents' awareness of virtual autism and to highlight the role of psychoeducation in improving the parental understanding.

2. Review of Literature

The studies related to the topic are as follows:

Issa, Lama & Hussein (2024) conducted a research study on the topic “Virtual Autism and Excessive Screen Exposure in Children Aged 0-3 Years: A Cross-sectional Study in the Lebanese Context”. This study explores the relationship between early ASD symptoms and excessive screen exposure in early childhood (0–3 years), introducing the concept of “Virtual Autism” followed by considering the variables such as gender, age of exposure initiation, screen duration, and screen type. The study involves the use of a descriptive cross-sectional design, with 73 participants from the south of Lebanon. The researchers used a detailed questionnaire based on existing research and the Early Childhood Autism Rating Scale to

assess behaviors related to autism. Participants were carefully selected based on certain criteria, and statistical tests like Pearson correlation and analysis of variance (ANOVA) were used to analyse the data. The findings showed a strong correlation between screen time and behaviors similar to autism, with the need for early intervention being emphasized. The study found that males as compared to females, were more likely to show autism-like behaviors. It also highlighted the importance of limiting screen time in young children. The study thus overall suggests that prolonged screen exposure in early childhood is linked to autism-like behaviors and impacts cognitive and sensory development. It gives more importance to the need for customized interventions and better parenting practices to manage screen use during the critical early years (0-3 years). The researchers recommend more studies to better understand the causes and explore specific interventions.

Ram et al. (2024) conducted a research study on the topic “Virtual autism among children: A leading hazard of gadget exposure and preventive measures.” This study explores the “virtual autism,” its causes, and the treatment or protective measures. As per the study, extensive screen time exposure may lead to various negative outcomes such as impaired social skills, language and communication delays, reduced physical activity, sleep problems, attention difficulties, and emotional and behavioural issues. Also, the prevention of this condition requires the use of a more holistic approach involving parents, educators, and policymakers. Key steps include setting screen time limits, selecting age-appropriate content, promoting physical activity, nurturing in-person relationships, and teaching digital literacy. Overall, this paper emphasizes the need to recognize the risks of extended screen time.

Ashraf and Azmat (2025) provide an editorial on the topic “The Growing Prevalence of Virtual Autism: A Cause for Concern.” This editorial explores the increasing prevalence of Virtual Autism, its impact on the children's cognitive, social, and emotional development, and the critical difference between this phenomenon and clinical autism spectrum disorder (ASD). As per the study, while technology proves to be more productive in today's world but there is a darker side emerging: the rise of “Virtual Autism,” a term coined to describe autistic-like symptoms in children heavily exposed to screens during their early developmental years. Chen et al. (2020) conducted the research study on the topic “Screen time and autistic-like behaviours among preschool children in China”. This is a cross-sectional study conducted in Shenzhen, China that examined the link between early screen exposure and autistic like behaviours in preschool children. The study included 29,461 child-caregiver pairs and collected data on screen time habits and autism-related behaviours using the self-administered structured questionnaire. Findings revealed that children who started

screen exposure at a younger age, had longer daily screen time, and accumulated more years of screen exposure were more likely to exhibit autistic-like behaviours. The first three years of life appeared to be a critical period during which the screen exposure increased the risk. The study suggests that limiting the screen time in early childhood may help to reduce the occurrence of autistic-like behaviours, though further longitudinal research is needed to confirm causality.

Aishworiya et al. (2022) conducted a research study on the topic “Are There Bidirectional Influences Between Screen Time Exposure and Social Behavioural Traits in Young Children?”. This study aims to investigate the causal relationship between screen time, social skills, and non-social behavioural traits in young children. This research utilizes a population-based, prospective cohort design, collecting data at five points. The study examines bidirectional relationships between caregiver-reported screen time at 12, 18, 24, 36, and 54 months and social behaviours measured using the Infant- Toddler Social- Emotional Assessment at 12 months, the Quantitative Checklist for Autism at 18, 24 and 36 months, and the Social Responsiveness Scale at 54 months. Cross-lagged path models were employed for analysis. The analysis included the data from 229 participants. Findings indicate that screen time at 12, 18, and 36 months predicts a non-social behavioural trait at 54 months. Cross-lagged path models demonstrated a clear directional relationship, where increased screen time at earlier ages contributes to weak social skills and atypical behaviours at later stages. However, early social skills or behavioural traits did not predict later screen time at any time point. These findings highlight the importance of closely monitoring children’s social behaviours in the context of prolonged screen exposure during early development.

Kumaraswamy & Binoe (2022) conducted the research study on the topic “Awareness of virtual autism among parents”. The study aims to analyse the awareness of virtual autism among the parents. Under this, a group of 50 parents aged 25 to 35 years was selected from Kerala’s Kannur district, and they had children between the ages of 0 to 4 years. The list of 10 questions was given, and the results showed a reasonable level of awareness among the parents for virtual autism.

3. Case Studies

In a study by Srilakshmi, Meghana, & Thanmayee (2024), three case studies were presented of children with significant behavioural challenges due to screen time exposure. All three were diagnosed with virtual autism based on the Modified Checklist for Autism

(M-CHAT) and the Indian Scale for Assessment of Autism (ISAA) evaluated at SDM Institute of Ayurveda and Hospital, Bengaluru (SDMIAH). These case studies are relevant to our research as they demonstrate how excessive screen exposure during early childhood leads to autism-like behaviours and highlight the significance of parents and guardians recognizing the potential dangers of excessive screen time for young children. It stresses the importance of encouraging healthy screen habits, fostering meaningful interactions, and promoting outdoor activities.

3.1 Case Study 1

A 4-year-old male child from a nuclear Hindu family has been exhibiting developmental concerns since the age of 2 years and 5 months. These concerns include speech delay, hyperactivity, and reduced attention span. He prefers solitary play, engages in repetitive behaviours, and has difficulty cooperating in environments outside the home. Initially, his parents dismissed these behaviours as typical for young children, believing that “children will be like this.” However, as these behaviours persisted and became more noticeable in school, they sought professional evaluation. The child’s mother, aged 29 at the time of conception. During pregnancy, she experienced stress and depression due to her partner’s absence for work. Additionally, she was diagnosed with hypothyroidism in the third month of gestation and was treated with medication. The child had an unremarkable birth history, born at full term with a birth weight of 2.9 kg, and there were no significant postnatal complications. At six months of age, the mother and child moved to Sri Lanka to join the father, who was employed there. During this period, the mother was primarily responsible for household duties, which limited her ability to engage with the child. Consequently, he had minimal face-to-face interaction, limited outdoor play, and spent significant time watching television and using smartphones. Marital discord between the parents was also present. By the age of three, his screen time had significantly increased, averaging two hours of television and three to four hours of smartphone use daily. The COVID-19 pandemic further restricted his outdoor activities. When the child started school at 3.5 years old, teachers raised concerns about his behaviour, noting frequent screaming, a preference for solitary play, and excessive running around. He was subsequently referred to a hospital for a comprehensive evaluation. The M-CHAT and ISAA were administered, yielding scores of 5/20 on M-CHAT and 122/200 on the ISAA.

3.2 Case Study 2

A 3.7-year-old Hindu male child from a nuclear family was brought in with concerns regarding limited communication skills, hyperactivity, a short attention span, difficulty

socializing with peers, a preference for solitary play, repetitive behaviours, a lack of sharing and cooperation, and frequent episodes of anger. His parents first noticed these behaviours around the age of three. The parental history includes maternal stress and thyroid dysfunction in the third trimester and was managed with medication. The child was born full-term via lower segment caesarean section (LSCS) with a birth weight of 3.4 kg and had an uneventful postnatal period. He was exclusively breastfed until the age of two years. Due to the parents' professional commitments and household responsibilities, the child was frequently left in the care of a secondary caregiver for approximately 10 hours a day. Since the age of one, he was exposed to excessive smartphone screen time, averaging 3-4 hours daily. Limited supervision also resulted in restricted outdoor activities and exploration. Around the time the child turned three, the mother became pregnant with her second child. During this period, parental attention shifted, reducing direct face-to-face interaction with the child, who increasingly turned to screens as a substitute for engagement. Currently, the child has a 7-month-old younger sibling but demonstrates minimal communication and interaction with him. At the age of three, he started preschool but faced challenges with both verbal and nonverbal communication. He also exhibited difficulty sharing toys, displayed frequent anger and irritability, and was unable to engage effectively with peers, raising concerns among caregivers. The child has been screen-free for the past 3-4 months. However, upon hospital evaluation, he scored 6/20 on the M-CHAT and 99/200 on the ISAA, indicating characteristics of virtual autism.

3.3 Case Study 3

A 2.5-year-old Hindu male child, previously living in an extended family, relocated to a nuclear family setting with his father eight months ago. Over the past five months, the mother has observed significant behavioural changes, leading her to seek medical evaluation. The primary concerns include speech regression, reduced attention span, difficulty socialising with other children, limited communication to express needs, a strong attachment to a particular toy, insisted on following the same routines, and hand flapping when excited. The mother was 24 years old at the time of conception and had previously experienced a miscarriage at two months of gestation due to a non-viable fetus. Her prenatal period was marked by stress stemming from marital conflicts and strained relationships with her husband's family. Additionally, she had a strong aversion to milk and experienced episodes of induced vomiting. The child was born full-term via lower segment caesarean section with a birth weight of 3.1 kg and has no postnatal complications. According to the parents, the child displayed healthy social skills in the previous home, including maintaining eye contact

and engaging in interactive play. However, after the move eight months ago, concerning symptoms began to emerge. The father, preoccupied with work, was often unavailable, while the mother, overwhelmed with household responsibilities, relied on screen time as a means of keeping the child occupied. As a result, he was left to watch television or play on a smartphone for 3-4 hours daily, with minimal verbal interaction or engagement. The family's residence in a remote and isolated area limited the child's opportunities for social interaction, as there were no accessible playmates. The father's late working hours further left the mother without support, making it difficult to take the child outside for play or social activities. A comprehensive evaluation revealed a score of 12/20 on the M-CHAT and 119/200 on the ISAA, indicating moderate concerns related to virtual autism.

4. Methodology

4.1 *Preparation of Questionnaire*

A structured questionnaire was developed to assess the parental awareness of virtual autism. The questionnaire consisted of 25 questions, incorporating both multiple-choice and subjective (open-ended) questions to capture both qualitative and quantitative insights. The questions focused on:

- Identifying Data
- Screen Time Exposure
- Parent-Child Interaction
- Social and environmental factors
- Developmental milestones
- Awareness and Psychoeducation

The inclusion of subjective questions allowed participants to elaborate on their understandings and perspectives, providing deeper insights into parental awareness. The questionnaire is as shown below:

Identifying Data

1. Give your email address.
2. What is the age of your child?
 - 0
 - 1
 - 2
 - 3

- 4
 - 5
 - 6
3. What is your family type?
 - Nuclear
 - Joint
 4. Does your child have any siblings?
 - Yes, my child has one or more siblings.
 - No, my child is an only child.
 5. Are both parents working?

Screen Time Exposure

1. How many hours per day does your child spend on screens (TV, tablet, smartphone, computer)?
2. At what age did your child start using screens regularly?
3. Do you use screens to calm your child when they are upset or to keep them occupied?
4. Do you use screens to make your child eat meals properly?

Parent-Child Interaction

1. How often do you engage in face-to-face conversations with your child?
2. Do you read books, tell stories, or sing songs to your child regularly?
3. Does your child prefer to use screen rather than spending time with you?
4. How frequently does your child engage in interactive play with you or your family members? If not, then give reason in a few lines.
5. Do you encourage your child to play with toys that promote imagination (Eg: Blocks, dolls, puzzles, etc)
6. How do you react when your child shows excessive temper tantrums for using the screen?

Social and environmental factors

1. Does your child interact with other children of his/ her age?
2. Does your child prefer to use screens rather than interacting with children or other people?
3. How often do you take your child outdoors or engage in physical activities together?
4. Do you have family rules or schedules regarding screen times?

Developmental Milestones

1. Does your child prefer to stay alone or play with peers?
2. Have you noticed any delays in your child's speech, or social skills like lack of eye contact, difficulty responding to their names or any other?
3. Have you observed repetitive behaviours like excessive scrolling of screen, fixation on screen or difficulty transitioning away from screens?

Awareness and Psychoeducation

1. Have you heard about virtual autism before?
 - Yes
 - No
2. Are you aware about of the potential effects of excessive screen exposure on the overall development of the child?
 - Yes
 - No
 - Maybe
3. Would you be interested in learning about strategies to manage screen use and promote social interactions?

Inclusion Criteria

- Parents of children aged 0-6 years.
- Parents who voluntarily participated in this study.
- Parents who could comprehend and respond to the questionnaire in the given language.

Exclusion Criteria

- Parents of children who were above 6 years.
- Parents of children with pre-diagnosed neurodevelopmental disorders.

4.2 Stimulus Used

The primary stimulus for the data collection was an online Google Forms questionnaire, ensuring accessibility and ease of participation.

4.3 Procedure

The Google Forms link was shared across social media sites, groups, and community networks for broader outreach. Parents voluntarily participated in the study by self-selecting and completing the questionnaire. No time restrictions were imposed, allowing the thoughtful responses to open-ended questions.

4.4 Analysis

The collected data was analysed using thematic analysis for subjective responses, identifying the patterns in the parental awareness.

5. Results

The study analysed parental awareness of virtual autism and screen exposure habits among children aged 0-6 years. The findings are as follows:

5.1 Family and Parenting Background

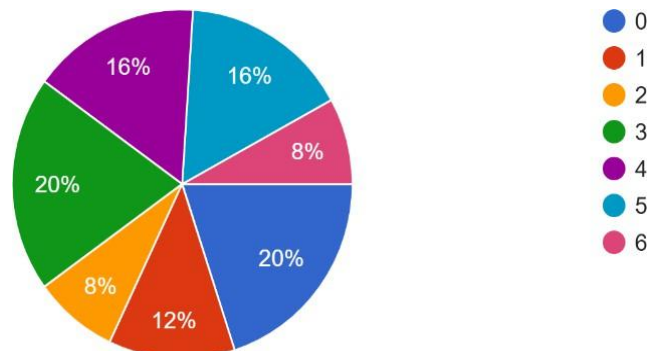


Figure 1 shows the percentage of ages of children

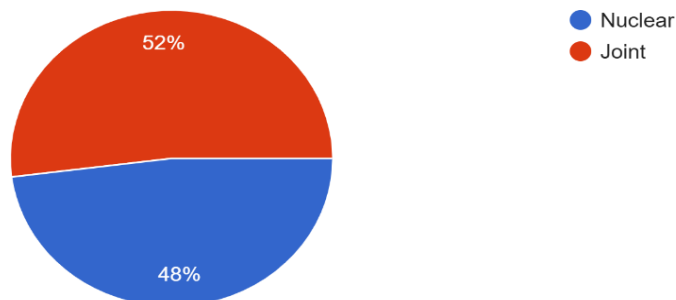


Figure 2 shows the percentage of family types of children

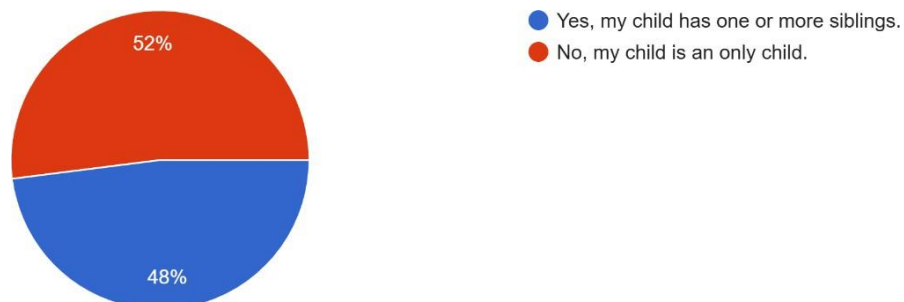


Figure 3 shows the percentage of the presence of siblings of children

From the above figures we can see that majority of children are 0 (20%) and 3 (20%) years old. About 52% of them belongs to joint families and rest 48% belongs to nuclear families. About 52% of them have one or more siblings and rest 48% are only child in the family. Also, from the thematic analysis, it was found that majority of parents were working,

indicating the potential reliance on digital media for child engagement.

5.2 Screen Time Usage Patterns

From the thematic analysis, it was found that the average daily screen time among the children was 2 to 4 hours. Children started using screens regularly between 2 to 3 years of age. Parents primarily used screens to calm or occupy their children. The most common reason for screen usage was helping children eat meals more easily.

5.3 Child Behavior and Social Interaction

From the thematic analysis, it was found that 5 out of 25 children preferred screens over spending time with their parents. 4 out of 25 preferred screens over interacting with peers or other people. Most parents did not have strict family rules regarding screen time regulation. 2 out of 25 children preferred to stay alone rather than playing with peers. 3 out of 25 children exhibited delays in social skill development, and 5 out of 25 children showed repetitive behaviors, such as excessive screen scrolling.

5.4 Parental Awareness of Virtual Autism

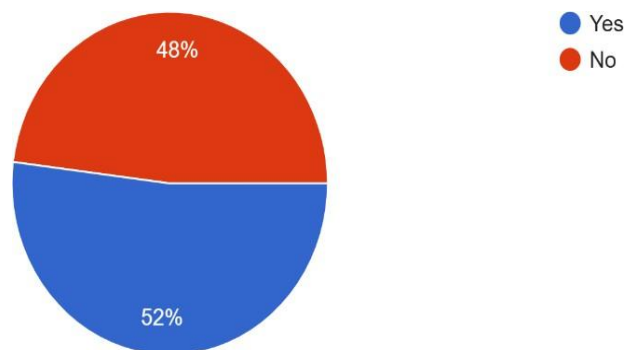


Figure 4 shows the percentage of awareness among the parents about virtual autism

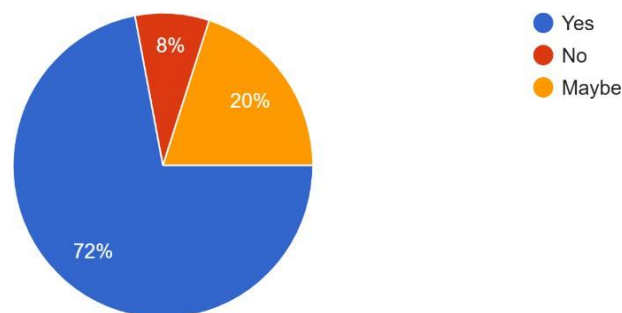


Figure 5 shows the percentage of awareness among the parents about the potential effects of excessive screen exposure on the overall development of the child

From the above figures, we can see that 48 % of parents were unaware of the term virtual autism. 72% acknowledged the negative effects of excessive screen exposure on child development. Also, 22 out of 25 parents were interested in learning about strategies to

manage screen use and promote social interactions.

6. Discussion

The present study aimed to assess parental awareness of virtual autism and the need for psychoeducation in its prevention. Findings indicate that while most parents are familiar with the term “virtual autism” and acknowledge the negative impact of excessive screen exposure on child development, significant gaps remain in their understanding of its underlying causes, effects, and preventive measures. This discrepancy highlights the need for targeted psychoeducational interventions to bridge these knowledge gaps.

One of the key observations in this study is that, despite awareness, many parents continue to permit prolonged screen exposure, often using digital devices as a means to engage their children. These practices reflect a behavioural pattern where the convenience outweighs awareness, reinforcing the importance of educating parents about practical strategies to manage screen time effectively. Additionally, a subset of parents reported concerns regarding their children’s social behaviours, including a preference for screens over interactions with peers or parents, delayed social skills, repetitive behaviours, and limited engagement in cooperative play. These findings align with existing research suggesting that excessive screen time, especially in early childhood, can impact attention, communication, and social development. Notably, a small percentage of children in the study exhibited behaviours such as preferring solitude over peer interactions or engaging in excessive screen-scrolling, which are the characteristic early indicators of virtual autism.

Despite these concerns, a positive outcome of this study is that a majority of parents expressed interest in learning the strategies to regulate screen use and promote healthier social interactions for their children. This willingness suggests an opportunity for interventions focused on increasing parental engagement, setting structured screen-time limits, and fostering alternative developmental activities such as outdoor play and interactive learning. The findings of the present study show a high degree of correlation with a previous study conducted by Kumaraswamy and Binoe (2022) which reported that 18 % of parents admitted that their children were addicted to electronic devices and about 72% of them regularly utilised electronic gadgets for more than two hours per day, comparable patterns were observed in the current study, where the screen time ranged from 2 to 4 hours daily and some children exhibited signs of screen preference and repetitive behaviours. Additionally, in a previous study, it was reported that only 12% of parents were aware of the term virtual autism. In contrast, the present study found that 52% of parents were familiar with the term.

This notable increase in awareness may reflect a growing recognition of virtual autism in recent years, possibly due to increased media coverage and professional discussions. However, despite this rise, a significant portion of parents still lack an accurate understanding, indicating the continued need for targeted awareness programs and psychoeducation.

The study's findings reinforce the growing body of evidence that underscores the role of parental behaviour in mitigating the risks of virtual autism. While technological devices are an integral part of modern life, the key challenge lies in balancing their use with meaningful social and cognitive experiences for children. Addressing these gaps through psychoeducation can empower parents with the knowledge and tools needed to create a more enriching and developmentally appropriate environment for their children.

7. Conclusion

The findings of the study reveal that while parents generally recognize the term “virtual autism” and acknowledge the harmful effects of excessive screen exposure, gaps persist in understanding of its causes, effects, and preventive measures. This underscores the urgent need for targeted psychoeducational interventions to bridge these gaps and equip parents with practical strategies to manage screen time effectively.

7.1 Future directions

The present study highlights a crucial insight: while the parents demonstrate a reasonable level of awareness about virtual autism, but the significant gaps remain in their understanding of its underlying causes, consequences, and preventive strategies. These gaps necessitate structured psycho-educational interventions aimed at imparting the home-based practical techniques to decrease the negative impact of excessive screen exposure.

- ***Fixed screen time:*** Introducing a structured screen limit.
- ***Screen-Free zones and times:*** Creating appropriate boundaries, such as no screens during meals or before bedtime, to foster healthier routines.
- ***Interactive play and social engagement:*** Encouraging parents to promote imaginative or outdoor play activities over digital consumption.
- ***Positive reinforcements:*** Rewarding non-digital activities to strengthen healthy behaviours.

7.2 Future Implications

Psychoeducation has the potential to reshape parenting practices and developmental

outcomes for children in the digital age:

- **Early detection and Intervention:** Psycheducated parents are more likely to recognize developmental delays and seek timely support.
- **Management of child's behaviour:** Psychoeducated parents are better equipped to adopt alternative strategies to manage the child's behaviour without the over-reliance on screens.
- **Holistic team building:** It strengthens the collaboration among the parents and psychologists in ensuring optimal child development.

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