LETTER TO THE EDITOR

Impact of screen time on ADHD and Autism in children and the role of parent-based interventions

Iqra Bukhari[1], Muhammad Bilal[2]

Dear Editor, Autism spectrum disorder (ASD) and attention deficit hyperactivity disorder (ADHD) are neurodevelopmental conditions that can significantly impair communication, social interaction, and learning abilities. The past decade has witnessed an unprecedented rise in screen time exposure among children, with emerging evidence suggesting concerning neurological implications that warrant clinical attention.

We present the case of a five-year-old boy brought to our outpatient clinic with prominent hyperactivity, expressive speech delay, and poor eye contact. His developmental history revealed excessive screen use beginning at 12 months, often exceeding 5–6 hours daily with minimal parental interaction or structured activities. Initial assessment using standardised screening tools suggested features consistent with ASD and ADHD. However, following a structured intervention involving complete screen restriction for the first month, followed by gradual reintroduction with strict time limits (30 minutes daily), coupled with enhanced parent-child interactive play and structured daily routines, clinically significant improvement was observed. Within three months, his speech clarity improved significantly, social engagement increased, and hyperactive behaviours substantially decreased. This clinical vignette highlights the potentially under recognised role of excessive screen exposure in mimicking or exacerbating neurodevelopmental symptoms.

Current evidence increasingly supports these clinical observations. A comprehensive nationwide study of children from China demonstrated a clear dose-response relationship between screen time duration and behavioural and developmental problems, including ADHD and autism-related traits.[1] Similarly, a longitudinal study found that toddlers with higher screen exposure at 18 months exhibited significantly greater ADHD and autism symptoms, along with lower language and developmental scores by preschool age.[2]

Most compellingly, a systematic review analysing data from over 53,000 children concluded that both the duration and early onset of screen exposure (particularly before 2 years) are associated with a significantly increased ASD risk, with some children demonstrating symptom improvement following screen use reduction.[3] The biological plausibility of these associations is supported by research indicating that excessive screen stimulation can alters dopamine and reward pathways, disrupts melatonin production affect sleep architecture, and may trigger attention-related behaviours that mimic ADHD symptomatology. Notably, controlled case studies have documented reversal of ADHD-like symptoms following systematic screen restriction interventions.[4]

While pharmacological management remains a cornerstone in established ADHD care, evidence-based non-pharmacological interventions—including behavioural modifications, comprehensive parental training, and structured environmental approaches—are increasingly recognised as first-line components of treatment, particularly in younger children.[5] In this context, parental education and adherence to evidence-based screen time recommendations become crucial preventive measures.

Current American Academy of Paediatrics guidelines recommend avoiding screen exposure for children before 18 months (except video chatting), limiting high-quality programming to 1 hour daily for children aged 2–5 years, and ensuring co-viewing with parents to facilitate learning.[6] Unfortunately, recent surveys indicate that many families, particularly in our region, substantially exceed these recommendations, with some children experiencing 4–8 hours of daily screen exposure.

While acknowledging that excessive screen time may be a correlating factor rather than causative of neurodevelopmental concerns, and that multiple confounding factors —such as socioeconomic status and parental engagement quality, may influence outcomes, the growing body of evidence warrants clinical vigilance. Given our clinical experience and the mounting research

[1]Department of Paediatrics and Neonatology, Bahria International Hospital, Lahore, Pakistan; [2]Department of Paediatrics and Neonatology, Farooq Hospital, Lahore, Pakistan.
Correspondence: Iqra Bukhari. e-mail: iqrabukhari30@gmail.com
ORCID ID:0009-0007-8802-649X

Submission completed: 26-09-2025 **1st Revision received:** 13-10-2025
Acceptance: 31-12-2025 **Last Revision received:** 30-12-2025

evidence, we strongly urge paediatricians and child psychiatrists to systematically screen for excessive digital media use during routine developmental assessments, provide evidence-based counselling on age-appropriate screen time limits, and emphasise the critical importance of interactive play and meaningful parent-child engagement.

Early parental awareness, coupled with timely intervention strategies, may help mitigate the risk or severity of neurodevelopmental and behavioural problems potentially linked to excessive screen exposure. Further prospective studies with standardised assessment protocols are needed to establish definitive causal relationships and develop optimal intervention strategies.

Disclaimer: None.

Conflict of Interest: None.

Funding Disclosure: None.

DOI: https://doi.org/10.47391/JPMA.32685

References

1. Chen B, Liu Y, Zhang L, Li L, Ma F, Hu Y, et al. Screen time and neurodevelopmental outcomes among children aged 3–6 years: findings from a nationwide study in China. J Psychiatr Res 2023;162:401-9. doi:10.1016/j.jpsychires.2023.04.017
2. Hill MM, Gangi DN, Miller M. Toddler screen time: longitudinal associations with autism and ADHD symptoms and developmental outcomes. Child Psychiatry Hum Dev 2024;55:971-82. doi:10.1007/s10578-023-01525-4
3. Sarfraz S, Shlaghya G, Narayana SH, Mushtaq U, Ameen BS, Nie C, et al. Early screen-time exposure and its association with risk of developing autism spectrum disorder: a systematic review. Cureus 2023;15:e42292. doi:10.7759/cureus.42292
4. Lissak G. Adverse physiological and psychological effects of screen time on children and adolescents: literature review and case study. Environ Res 2018;164:149-57. doi:10.1016/j.envres.2018.01.015
5. Ogundele MO, Ayyash HF. ADHD in children and adolescents: review of current practice of non-pharmacological and behavioural management. AIMS Public Health 2023;10:35-51. doi:10.3934/publichealth.2023003

Author Contribution:
IB: Concept, drafting and final approval.
MB: Review and critical revision.