Annals of Case Reports & Reviews

Review Article

Kloster Lopes SH, et al. 2025(6): 1000443
doi: 10.39127/2574-5747/ACRR: e443

Importance of Early Diagnosis of ASD and Its Current Clinical Management – An Article Review

Sarila Hali Kloster Lopes[1*], Mateus Sabaini Venazzi[4], Ian Caldeira Ruppen[1], André Cesar Leandro[1], Larissa da Rosa Piccoli[1], Tauane Cano Barreto[1], Emily Eduarda Hellmann[1], Ana Paula Mendes[1], Priscila De Oliveira Barros[1], Camilla Antunes Zanini[3], Lara Beatriz Dallaqua Bitiati[1], Ana Carolina Langendyk Rodrigues[1], Maria Clara Costa Calvo[1]

[1]Centro Universitário Ingá – Uningá, Maringá, PR, Brazil.
[2]Hospital Memorial Uningá - HMU, Maringá, PR, Brazil.
[3]Faculdade Morgana Potrich, Mineiros, GO, Brazil.
[4]Universidade Estadual de Maringá – UEM, Maringá, PR, Brazil.

[*]**Corresponding author:** Ian Caldeira Ruppen, Centro Universitário Ingá - Uningá, Maringá, Paraná, Brazil. Email: Ian2ruppen@gmail.com; ORCID: https://orcid.org/0000-0003-1706-1662

Citation: Kloster Lopes SH, Venazzi MS, Ruppen IC, Leandro AC, da Rosa Piccoli L, et al. (2025) Importance of Early Diagnosis of ASD and Its Current Clinical Management – An Article Review. Annal Cas Rep Rev: ACRR-443.

Received Date: 05 June, 2025; **Accepted Date:** 11 June, 2025; **Published Date:** 16 June, 2025

Abstract

Early diagnosis of Autism Spectrum Disorder (ASD) is a decisive factor for the effectiveness of therapeutic interventions and for improving long-term prognosis. Studies show that interventions begun before three years of age are associated with significant gains in language, social skills and behavior. In Brazil, Ministry of Health guidelines recommend universal screening in primary-care offices using validated tools such as the M-CHAT. Beyond its impact on neuropsychomotor development, early diagnosis helps reduce stigma and ensures appropriate family support. This article reviews recent literature on diagnostic criteria, screening instruments and current clinical-management strategies, emphasizing integrated, multidisciplinary care models. We conclude that public-health policies and professional training are essential to broaden early identification and optimize the care of children with ASD, reducing socioeconomic inequalities and improving quality-of-life indicators.

Keywords: Autism Spectrum Disorder; Early diagnosis; Clinical management; Early intervention; Screening.

Introduction

Autism Spectrum Disorder (ASD) is a chronic neurodevelopmental condition characterized by persistent deficits in social communication and by restricted, repetitive patterns of behavior, interests or activities [1]. Global prevalence is estimated at roughly 1–2 % of children, although regional variations occur owing to methodological differences and disparities in access to health services [2]. In Brazil, recent data suggest a prevalence similar to that of developed countries, yet underreporting persists because of insufficient professional training and the absence of consolidated screening programs [3].

The relevance of early ASD diagnosis rests on robust evidence of neuroplasticity: the critical window for intervention lies up to roughly three years of age, a period marked by intense synaptogenesis and neuronal pruning, which confers greater responsiveness to behavioral and therapeutic stimuli [4,5]. Clinical trials demonstrate that interventions based on Applied Behavior Analysis (ABA) and parent-mediated models, when started in early childhood, promote significant improvements in expressive and receptive language, social skills and the reduction of risk behaviors [6,7].

Screening instruments play a central role in this process by identifying early signs of ASD in primary-care settings. Tools such as the Modified Checklist for Autism in Toddlers (M-CHAT) and the Social Communication Questionnaire (SCQ) show sensitivities up to 85 % and specificities above 70 % in at-risk populations [8,9]. However, their effectiveness in routine pediatric practice is heterogeneous, reflecting logistical barriers such as limited consultation time, lack of training and unclear referral pathways for definitive diagnosis [10,11].

Beyond diagnostic aspects, ASD management requires an integrated multidisciplinary approach. After diagnostic confirmation, assessment should involve educational psychologists, speech-language pathologists, occupational therapists, child psychiatrists and neuropsychologists to design an individualized intervention plan addressing core symptoms and common comorbidities such as anxiety disorders, attention-deficit/hyperactivity disorder (ADHD) and sensory difficulties [12,13]. Comprehensive care models that include family support and parent groups show positive impact on engagement and adherence, strengthening family protagonism in therapy [14].

Public-health policies strongly influence access to early diagnosis and intensive interventions. In Brazil, Ministry of Health guidelines recommend universal screening during well-child visits, funding for behavioral therapies and the implementation of clear referral pathways [3]. Yet implementation reveals regional disparities, with better coverage in major urban centers and a lack of systematic monitoring of quality indicators [2,3]. Social stigma surrounding ASD further delays early evaluation, as prejudice and misinformation can hinder recognition of initial signs, especially in settings with lower educational levels and limited resources [13]. Public awareness campaigns coupled with ongoing professional training and active-surveillance strategies such as the U.S. "Learn the Signs. Act Early." program have increased detection by up to 30 % before 36 months of age [2].

Finally, the literature underscores the need to develop and validate screening tools adapted to Brazilian epidemiological and sociocultural realities and to integrate tele-health technologies that can extend interventions to remote areas [7]. This article systematically reviews evidence on the importance of early ASD diagnosis and its current clinical management, discussing diagnostic criteria, screening instruments, intervention protocols and strategies to strengthen the health-care network, thereby providing guidance to reduce regional inequalities and improve clinical outcomes and quality of life for children with ASD.

Objectives

This article aims to systematically review evidence on the importance of early ASD diagnosis and its current clinical management, discussing screening instruments, intervention protocols and strategies to improve the health-care network.

Materials and Methods

A literature review was conducted using the PubMed, SciELO, Google Scholar and ScienceDirect databases.

Discussion

The accuracy of ASD screening instruments in primary-care contexts varies according to population prevalence and sociodemographic profile. While studies in high-risk populations report sensitivities up to 85 % for the M-CHAT, use in routine clinics can increase false-positive results, overloading specialist referral systems [8,10]. Continuous training of pediatricians and nurses including hands-on instruction in instrument application and interpretation can mitigate this effect, shortening the interval between initial identification and definitive diagnostic evaluation [11]. Behavioral early-intervention programs remain the first-line therapeutic strategy. Structured ABA programs with intensities of 20–40 hours per week yield substantial gains in verbal and non-verbal IQ, social communication and reduction of disruptive behaviors [6,7]. High costs, however, limit availability in public systems without appropriate subsidies. Lower-cost models adapted to resource-limited settings, such as the Early Start Denver Model (ESDM), have shown promising results by combining ABA techniques with parental coaching, facilitating skill generalization in natural environments [14].

Intervention effectiveness is enhanced when caregivers are actively involved. Parent-mediated approaches empower families to implement therapeutic strategies in the child's daily life, providing consistency and continuity of stimuli while strengthening emotional bonds and reducing parental stress [13]. These models nevertheless require institutional support, with qualified supervision and accessible guidance materials. Regarding clinical management, network-organized services with well-defined referral pathways are essential for longitudinal follow-up and continual adjustment of intervention plans. Integrated health-information systems track indicators such as average age at diagnosis, time to intervention onset and functional outcomes, informing process improvements [12].

Robust public policies that fund intensive therapies and professional training are decisive for equitable access. In Brazil, although the Unified Health System (SUS) covers behavioral interventions, heterogeneous implementation across states results in unequal service availability and quality [3]. Establishing regional reference centers and tele-consultation programs may reduce these disparities. Combating social stigma requires community education and school-inclusion initiatives. International experience shows that inclusive-school programs allied to local-media campaigns reduce prejudice and encourage early multidisciplinary evaluation [13,2]. Coordination among health, education and social-assistance sectors is indispensable for comprehensive care of children with ASD. Future research should explore biomarkers such as quantitative neuroimaging and neurochemical markers to refine diagnostic criteria and anticipate subclinical signs of ASD [5]. Moreover, developing apps and digital platforms for remote behavior monitoring, coupled with artificial intelligence, may broaden screening reach and optimize longitudinal follow-up across diverse socioeconomic contexts.

Conclusion

Early diagnosis of Autism Spectrum Disorder is fundamental for optimizing therapeutic interventions and improving long-term prognosis. Neuroplasticity evidence indicates a critical window up to three years of age, when children show greater responsiveness to behavioral and parent-mediated strategies [4,7]. Incorporating validated screening tools such as the M-CHAT and SCQ into primary care is essential, provided that ongoing professional training maintains adequate sensitivity and specificity [8,11]. ASD clinical management must rely on an integrated multidisciplinary approach involving educational psychologists, speech-language pathologists, occupational therapists, child psychiatrists and neuropsychologists to address core symptoms, frequent comorbidities and each child's individual needs [12,13].

Intensive ABA-based interventions produce significant gains in communicative capacity and adaptive functioning, though high costs call for public-subsidy mechanisms to ensure equitable access [6]. Parent-mediated strategies strengthen family engagement and extend skill generalization to everyday settings, making qualified supervision and educational materials indispensable [14]. Organizing care networks with clear referral pathways and integrated information systems optimizes longitudinal follow-up and enables continual adjustment of intervention plans. Clear public policies that fund intensive therapies, train human resources and monitor quality indicators are crucial for reducing regional and socioeconomic disparities [3]. Expanding regional reference centers and tele-health use can overcome geographic barriers and extend early interventions. Moreover, combating social stigma requires health-education and school-inclusion actions through community campaigns and teacher training to reduce prejudice and encourage early multidisciplinary assessment [2,13]. Ultimately, multisector engagement across health, education and social-assistance spheres reinforces the support network for families.

References

1. AMERICAN PSYCHIATRIC ASSOCIATION. Manual Diagnóstico e Estatístico de Transtornos Mentais: DSM-5. Porto Alegre: Artmed, 2014.
2. WHO. Autism spectrum disorders: from science to practice. Geneva: World Health Organization, 2013.
3. BRASIL. Ministério da Saúde. Diretrizes para o diagnóstico e manejo do Transtorno do Espectro Autista. Brasília: MS, 2018.
4. LANDA, R. Diagnosis of autism spectrum disorders in the first 3 years of life. *Nature Clinical Practice Neurology*, v.4, n.3, p.138–147, 2008.
5. JONES, W.; KLIN, A. Attention to eyes is present but in decline in 2–6-month-old infants later diagnosed with autism. *Nature*, v.504, n.7480, p.427–431, 2013.
6. DAWSON, G. et al. Early behavioral intervention is associated with normalized brain activity in young children with autism. *Journal of the American Academy of Child & Adolescent Psychiatry*, v.49, n.11, p.1150–1158, 2010.
7. ZWAIGENBAUM, L. et al. Early intervention for children with autism spectrum disorder under 3 years of age: recommendations for practice and research. *Pediatrics*, v.136, Suppl 1, p.S60–S81, 2015.
8. ROBINS, D.L. et al. The Modified Checklist for Autism in Toddlers: an initial study investigating the early detection of autism and pervasive developmental disorders. *Journal of Autism and Developmental Disorders*, v.32, n.2, p.131–144, 2002.
9. RUTTER, M.; BAILEY, A.; LORD, C. The Social Communication Questionnaire. Los Angeles: Western Psychological Services, 2003.
10. FILIPE, G. et al. Screening for autism in primary care: utility of the M-CHAT. *Pediatrics*, v.117, n.1, p.185–196, 2006.
11. JOHNSON, C.P.; MYERS, S.M. Identification and evaluation of children with autism spectrum disorders. *Pediatrics*, v.120, Suppl 4, p.1183–1215, 2007.
12. VOLKMAR, F.R.; ROGERS, S.; PAUL, R.; PELPHREY, K. *Handbook of Autism and Pervasive Developmental Disorders*. 4. ed. Hoboken: John Wiley & Sons, 2014.
13. SACREY, L.A. et al. Early markers of autism spectrum disorders: developing a research agenda. *Journal of the American Academy of Child & Adolescent Psychiatry*, v.52, n.12, p.1142–1149, 2013.
14. PIERCE, K. et al. Detecting, studying, and treating autism early: the emergence of the infant sibling research consortium. *Pediatrics*, v.123, Suppl 5, p.S37–S45, 2009.
15. LORD, C.; RUTTER, M.; LE COUTEUR, A. Autism Diagnostic Interview-Revised: a revised version of a diagnostic interview for caregivers of individuals with possible pervasive developmental disorders. *Journal of Autism and Developmental Disorders*, v.24, n.5, p.659–685, 1994.