

**STUDII ȘI CERCETĂRI: PSIHOLOGIE**

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**EARLY IDENTIFICATION OF AUTISM SPECTRUM DISORDERS:  
CLINICAL UTILITY OF ADOS – 2 FOR EARLY INTERVENTION SERVICES***Marina CALAC, Sergiu TOMA**Center for Early Intervention "Voinicel"*

Early identification of developmental delays is a key-principle in early intervention services that assures the optimal and most required supporting procedure for children who are at risk of ASD. The Autism Diagnostic Observation Schedule, 2nd edition (ADOS-2) is a diagnostic instrument which forms part of the recommended standardized tool for the assessment of Autism Spectrum Disorder (ASD), however raw scores are affected by age, development and language level. The utility of the ADOS-2 as used internationally offers the opportunity to practitioners and families to start EI services with a specific focus on behavioural and occupational therapy to stimulate the early development of the child according to his/her specific needs. The present article describes the initial results obtained results on initial and repeated assessments using ADOS-2 for 30 children aged 12-36 months children with developmental disabilities and children who have been referred to Center of Early Intervention Voinicel because of possible autism spectrum disorder. All children are from high risk for ASD by M-CHAT results. The results confirm the relevance of initial assessment to determine the level of severity of Autism after a repeated assessment.

**Keywords:** *autism diagnostic observation schedule, autism spectrum disorder, calibrated severity score, early intervention services, diagnosis severity, toddler module, modified checklist for autism in toddlers (M-CHAT).*

**IDENTIFICAREA PRECOCE A TULBURĂRILOR DE SPECTRU AUTISM:  
UTILITATEA CLINICĂ A ADOS - 2 PENTRU SERVICIILE DE INTERVENȚIE RAPIDĂ**

Identificarea precoce a întârzierilor de dezvoltare este un principiu-cheie în serviciile de intervenție timpurie care asigură procedura optimă și cea mai necesară de sprijin pentru copiii expuși riscului de TSA (Tulburări din spectru autism). Programul de Observație pentru Diagnosticul Autismului, ediția a 2-a (ADOS-2) este un instrument de diagnostic care face parte din instrumentele standardizate și recomandate pentru evaluarea tulburărilor de spectru autism (TSA). Utilitatea ADOS-2, constă în faptul că oferă posibilitatea clinicienilor și familiilor de a începe prestarea serviciilor de intervenție timpurie cu un accent special pe terapia comportamentală și ocupațională pentru a stimula dezvoltarea timpurie a copilului în funcție de nevoile sale specifice. Prezentul articol descrie rezultatele inițiale obținute în urma evaluărilor inițiale și repetate cu ajutorul ADOS-2 pentru 30 de copii în vârstă de 12-36 de luni cu copii cu tulburări de dezvoltare și copii care au fost evaluați la Centrul de intervenție timpurie Voinicel din cauza riscului pentru tulburări de spectru autism. Toți copiii sunt expuși riscului crescut de ASD prin rezultatele M-CHAT. Rezultatele confirmă relevanța evaluării inițiale pentru a determina nivelul de severitate a autismului după o evaluare repetată.

**Cuvinte-cheie:** *programul de observație pentru diagnosticul autismului, tulburări de spectru de autism, scor de gravitate calibrat, servicii de intervenție timpurie, M-CHAT, tulburări de dezvoltare*

## Introduction

Autism is a developmental disorder that was first described by Leo Kanner in 1943, in a classic article that included case studies of 11 children. At the present time, according to the criteria in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition or DSM (American Psychiatric Association, 2013) and the International Classification of Diseases or ICD-10 (World Health Organization, 1993) autistic disorder is defined in terms of qualitative impairments in social interaction and communication, and restricted, repetitive, and stereo-typed patterns of behaviors, interests, and activities, with impairments in one of these areas prior to the age of 3 years old. At the same time screening and the role of the pediatrician have become even more critical as we have recognized the stability of early diagnosis over time and the importance of early intervention. At this point, experts working with children with autism agree that early intervention is critical. The available evidence from studies indicates that early intervention leads to better outcomes. A number of studies have demonstrated that children make greater gains when they enter a program at a younger age.

There is professional consensus about certain crucial aspects of treatment (intensity, family involvement, focus on generalization) and empirical evidence for certain intervention strategies.

### *About ADOS-2*

The Autism Diagnostic Observation Schedule, second edition (ADOS-2) (Lord, Rutter et al., 2012) is a comprehensive diagnostic instrument which forms part of the recommended "gold standard" for the assessment of Autism Spectrum disorders. The ADOS-2 was originally developed to standardize classification of ASD across research settings, but is now widely recommended for use in clinical practice (Filipek et al., 2000; Huerta & Lord, 2012). The recent revision of the ADOS-2 includes the addition of the Toddler Module (Lord, Luyster, Gotham, & Guthrie, 2012; Luyster et al., 2009) which can be used to assess ASD symptoms in children aged 12–30 months. While the ADOS-2 provides a standardized assessment of ASD symptoms, raw scores are more variable across time and are affected by age, development and language level (de Bildt et al., 2004; Gotham, Risi, Pickles, & Lord, 2007; Gotham, Pickles, & Lord, 2009)

The ADOS-2 includes five modules, each requiring just 40 to 60 minutes to administer. The individual being evaluated is given only one module, selected on the basis of his or her expressive language level and chronological age.

- Toddler Module – for children between 12 and 30 months of age who do not consistently use phrase speech.
- Module 1 – for children 31 months and older who do not consistently use phrase speech.
- Module 2 – for children of any age who use phrase speech but are not verbally fluent.
- Module 3 – for verbally fluent children and young adolescents.
- Module 4 – for verbally fluent older adolescents and adults.

Each module engages the examinee in a series of activities involving interactive stimulus materials (all included in the ADOS-2 Kit). To illustrate, activities in Module 3 are listed below: Construction Task, Make-Believe Play, Joint Interactive Play, Demonstration Task, Description of a Picture, Telling a Story From a Book, Cartoons, Conversation and Reporting, Emotions, Social Difficulties and Annoyance, Break, Friends, Relationships, and Marriage, Loneliness, Creating a Story.

## Method

The study of the Clinical Utility of the Toddler Module of ADOS-2 Test for Autism Spectrum Disorders had the goal to identify the correlation between the early identification of ranges of concerns and classification cutoff scores of Modules 1-2 of ADOS-2 test in order to estimate the impact of early intervention in ASD. There have been evaluated 30 children aged 12-36 months with developmental disabilities and children who have been referred to Center of Early Intervention Voinceal because of possible autism spectrum disorder. All children are from high risk for ASD by M-CHAT results.

There was used the Autism Diagnostic Observation Schedule, Second Edition (Lord, C., Rutter, M. 2012) for the identification of the ranges of concern Module Toddler. Children who where with concerns for ASD where included to early intervention program (focused on providing behavioural therapy, based on the principles of applied behaviour analysis). After 6-12 months children where re-evaluated by ADOS-2 using Module 1 and 2.

### *The evaluated group of children*

The children that where included in the clinical research where formed as follows:

- A total of 30 children from age 12 to 30 months at the period of initial evaluation

- 21 boys and 7 girls
- 24 of them from urban area and 6 from rural area
- 100% of children (all 30 children) after the initial evaluation were referred to early intervention focused on providing behavioural therapy, based on the principles of applied behaviour analysis.
- The average age at initial evaluation of all children was **23,5 months** and **42,5 months** at repeated evaluation

### Results

Based on the repeated evaluation (see table nr.1) of the group of children there have been made the following conclusions:

- 86 % (26 of 30) of children remained with the same level of ASD related symptoms as initially evaluated.
- 4 out of 6 children with the lowest level of concern (based on the clinical observation of the evaluator) indicated the need for additional evaluation for other developmental delays – especially intellectual disability and ADHD.
- 21 out of 25 children who's level of concern after initial evaluation was medium to moderate or medium to severe, indicated at the repeated evaluation various levels of ASD related symptoms and cumulated scores adequate for the diagnosis of Autism. The various levels of ASD related symptoms at repeated evaluation in order to be adequately explained need additional research that could be focused on the indicators of – levels of severity, ADOS-2 criteria for different situations (verbal/non-verbal, age etc.).

**Table**

**Results of initial and repeated evaluation using ADOS-2, based on the level of severity of related ASD symptoms or risk of ASD**

Range of concern	Number of children at initial evaluation	Number of children with the same or higher range of ASD related symptoms after at least 6 to 12 months after initial evaluation
Little concern	6	5
Medium to moderate concern	7	6
Medium to severe concern	17	15
<b>Total</b>	<b>30</b>	<b>26</b>

### Conclusion

- Based on the performed clinical research, the ADOS-2 demonstrates strong predictive validity. It provides a highly accurate picture of current ASD-related symptoms, based on real-time observations.
- The Toddler Module designed specifically for children between 12 and 30 months of age who do not consistently use phrase speech can be successfully used in early intervention programmes to more accurately identify toddlers at risk for ASD and ultimately refer to specialized programs as early as possible.
- Physicians, clinical psychologists, school psychologists, speech-language pathologists and occupational therapists can use ADOS-2 results to inform diagnosis, intervention, educational placement and treatment planning. ADOS-2 can be used with a wide range of children and adults in any hospital, clinic or school that serves individuals with developmental disorders.

### References:

1. AKSHOOMOFF, N.A., STAHER, A. Early intervention programs and policies for children with autistic spectrum disorders. In: Fitzgerald, H.E., Lester, B.M., Zuckerman, B., editors. *The crisis in youth mental health: Critical issues and effective programs*. 1: Childhood Disorders. Westport, CT: Praeger, 2006, p.109-131.
2. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4. Washington, DC: author; 2000. text revision.
3. CHARMAN T., Baird, G. Practitioner review: Diagnosis of autism spectrum disorder in 2- and 3-year-old children. In: *Journal of Child Psychology & Psychiatry*. 2002, no 43(3), p.289-305.
4. LECAVALIER, L. An evaluation of the Gilliam Autism Rating Scale. In: *Journal of Autism and Developmental Disorders*. 2005, no35, p.795-805.
5. LORD, C. Follow-up of two-year-olds referred for possible autism. In: *Journal of Child Psychology and Psychiatry*. 1995, no36(8), p.1365-1382.
6. LORD, C., BAILEY, A. Autism Spectrum Disorders. In: Rutter, M., Taylor, E., editors. *Child and adolescent psychiatry: Modern approaches*. 4. Oxford: Blackwell Publications, 2002., p.636-663.

7. LORD, C., RISI, S., LAMBRECHT, L., COOK, E.H. Jr., LEVENTHAL, B.L., DiLAVORE, P.C. et al. The Autism Diagnostic Observation Schedule–Generic: A standard measure of social and communication deficits associated with the spectrum of autism. In: *Journal of Autism and Developmental Disorders*, 2000, no30(3), p.205-223.
8. LORD, C., RUTTER, M, DiLAVORE, P.C., RISI, S. *Autism Diagnostic Observation Schedule*. Los Angeles: Western Psychological Services, 2001.
9. MANDELL, D.S., PALMER, R. Differences among states in the identification of autistic spectrum disorders. In: *Archives of Pediatric and Adolescent Medicine*. 2005, no159, p.266-269.
10. PILOWSKY, T., YIRMIYA, N., SHULMAN, C., DOVER, R. The Autism Diagnostic Interview-Revised and the Childhood Autism Rating Scale: Differences between diagnostic systems and comparison between genders. In: *Journal of Autism and Developmental Disorders*, 1998, no 28, p.143-151.

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