

Methods and Approaches of Addressing Communication Disorders in Children with Autism Spectrum Disorder (ASD)

طرق وأساليب التكفل باضطرابات التواصل لدى الأطفال ذوي اضطراب طيف التوحد

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Receipt date :21/02/2025

Acceptance Date :30/04/2025

Published date :25/05/2025

Abstract: Communication, whether verbal or non-verbal, is a fundamental component of human interaction. However, children with autism spectrum disorder (ASD) face significant challenges in this domain. Communication deficits are among the core diagnostic criteria for ASD, as outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM). These difficulties manifest particularly in areas such as joint attention, imitation, eye contact, role-play, and echolalia, in addition to challenges in acquiring abstract concepts. In some cases, these deficits may extend to a complete absence of language, with varying degrees of severity from one child to another. Given the crucial role of communication in the development of social and cognitive skills, addressing communication disorders is a priority for both specialists and caregivers. In this context, the speech-language pathologist (SLP) plays a key role within the multidisciplinary team, employing adapted methods and strategies to enhance communication abilities in children with ASD. Thus, this study aims to shed light on the nature of communication disorders in this population, their manifestations, and intervention approaches, with a particular focus on the role of the SLP in therapeutic management. Moreover, it highlights the importance of Augmentative and Alternative Communication (AAC) systems in improving children's ability to engage and communicate effectively.

and Approaches of Addressing, Augmentative and Alternative Speech-Language Pathologist (SLP).

Keywords: Autism Spectrum Disorder; Communication disorder, Methods

الملخص: يعتبر التواصل، سواء كان لفظياً أو غير لفظي، عنصراً جوهرياً في التفاعل البشري. إلا أن الأطفال المصابين باضطراب طيف التوحد (ASD) يواجهون تحديات كبيرة في هذا المجال، حيث يُعد القصور في التواصل من المعايير الأساسية لتشخيص الاضطراب وفقاً للدليل التشخيصي والإحصائي للاضطرابات النفسية (DSM). وتظهر هذه الصعوبات بشكل خاص في مجالات مثل الانتباه المشترك، التقليد، التواصل البصري، لعب الأدوار، وتكرار الكلام، إلى جانب صعوبة اكتساب المفاهيم المجردة، والتي قد تصل في بعض الحالات إلى الغياب التام للغة. مع اختلاف درجة التأثر من طفل لآخر، نظراً للدور المحوري الذي يلعبه التواصل في تنمية المهارات الاجتماعية والإدراكية، يُشكل التكفل باضطراباته أولوية لكل من المختصين والأولياء. في هذا

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الإطار، يؤدي المختص الأر طفوني دوراً أساسياً ضمن الفريق متعدد التخصصات، حيث يعتمد على أساليب واستراتيجيات مُكيفة تهدف إلى تعزيز المهارات التواصلية لدى الأطفال ذوي اضطراب طيف التوحد. تهدف هذه الدراسة إلى تسليط الضوء على طبيعة اضطرابات التواصل لدى هذه الفئة، مظاهرها، وسبل التكفل بها، مع التركيز على دور المختص الأر طفوني في العملية العلاجية، وأهمية استخدام وسائل التواصل البديل والمعزز في تحسين قدرة الأطفال على التفاعل والتواصل بفعالية.

الكلمات المفتاحية: اضطراب طيف التوحد، اضطراب التواصل، طرق وأساليب التكفل، التواصل البديل والمعزز، المختص الأر طفوني.

- Introduction:

Autism Spectrum Disorders (ASD) are among the most extensively studied neurodevelopmental disorders, with a growing prevalence observed worldwide. A meta-analysis conducted in 2010 estimated this prevalence at 7.6 per 1,000 among individuals under 27 years old (Baxter et al., 2015). In France, according to the National Institute of Health and Medical Research (INSERM), one in 100 children is born with ASD, with a prevalence three times higher in boys (Loomes, Hull & Mandy, 2017). This gender disparity partly reflects a diagnostic bias, as girls are often underdiagnosed due to different clinical manifestations.

ASD, as defined by the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, 5th edition), is characterized by persistent deficits in two main areas: communication and social interactions on one hand, and stereotyped behaviours or restricted interests on the other (Degenne, C., Dupin, H., & Gloriod, M. S., 2020). These deficits appear in early childhood and have a lasting impact on a child's developmental abilities, particularly in communication, which is a central aspect of both diagnosis and intervention.

Communication disorders in ASD present in various ways, ranging from a complete lack of verbal language to a well-developed vocabulary but with difficulties in reciprocal exchanges (Tager-Flusberg et al., 2013). These deficits persist and influence overall prognosis, highlighting the need for early and tailored intervention.

Managing children with ASD is a major public health concern. Studies have shown that early interventions combining educational programs and specialized care

promote a positive developmental trajectory (Baxter et al., 2015). In this context, speech therapists play a crucial role, whether in establishing a functional communication system or supporting various stages of language development. Where they work on addressing communication disorders at an early age using tools and methods tailored to the characteristics of each child. Perhaps the most well-known of these methods is augmentative and alternative communication (AAC).

To explore these important aspects, this research paper will aim to answer the following questions: What is communication? What are the forms of communication disorders in children with autism spectrum disorder? How are communication disorders managed in children with autism spectrum disorder?

1- Autism Spectrum Disorder: Its History, Definition, and Main Associated Disorders

Autism was first described in 1943 by Leo Kanner, a psychiatrist trained in the German school, based on the observation of common symptoms in four young patients. Since this initial definition, various disciplines such as psychoanalysis, cognitive sciences, and genetics have contributed to expanding our understanding of this syndrome.

Three major classifications describe autism: the ICD-10, the World Health Organization (WHO) classification, and the DSM-5. According to the ICD-10, autism is considered a pervasive developmental disorder (PDD), characterized by impairments in social interactions, communication, and restricted, repetitive behaviours. The WHO emphasizes that these manifestations appear before the age of three. The DSM-5, on the other hand, groups these manifestations under the term "autism spectrum disorder" (ASD), classified among neurodevelopmental disorders, with a two-domain diagnostic framework: persistent difficulties in communication and social interactions, as well as stereotyped behaviours and restricted interests.

Autism, recognized as a long-term and persistent developmental syndrome, manifests in various forms concerning cognitive, linguistic, and sensory abilities,

hence the growing use of the term “autism spectrum.” ASD presents a wide range of profiles: some individuals experience severe or mild intellectual disabilities, while others have average or superior intelligence. Associated disorders frequently encountered include intellectual disability (40% of cases), epilepsy (30%), anxiety disorders, mood disorders, attention disorders with or without hyperactivity, motor disorders, and metabolic disorders such as allergies or gastrointestinal dysregulations. This variability in manifestations reflects the complexity of the autism spectrum. (Degenne, C., Dupin, H., & Gloriod, M. S, 2020)

2- What are the diagnostic criteria for autism spectrum disorder according to the DSM-5?

The DSM-IV-TR was used to diagnose pervasive developmental disorders (PDD), which are now referred to as autism spectrum disorders (ASD). The DSM-5 has maintained two main pillars for ASD diagnosis:

1. Persistent deficits in social communication:

- Difficulties in non-verbal interactions (eye contact, facial expressions, gestures)
- Inability to establish peer relationships
- Lack of spontaneous sharing of interests or emotions.
- Deficit in social and emotional reciprocity
- Language problems (delay, absence of speech, or repetitive and stereotyped language)

2. Restricted and repetitive behaviours:

- Restricted and obsessive interests.
- Rigid adherence to routines or rituals.
- Repetitive movements (motor mannerisms).
- Lack of imaginative play or social imitation.

The DSM-5 introduces specifiers to describe the severity of symptoms and associated comorbidities, such as intellectual disability (ID), language disorders, or other medical or environmental factors. (Courtemanche, J., 2021).

3- Communication in Children with ASD:

According to the speech therapist, Nicole Denni-Krichel, communication involves the transfer of information in various forms and through all available channels. It relies on a set of interindividual exchange mechanisms, involving not only language (often spoken) but also non-verbal behaviours that are unconsciously regulated by the presence of others, such as gestures, voice tone, or interpersonal distance. (Carlier, J., MARTINEZ, J., Leman, M. F., & Pruvost, F. 2013)

She emphasizes that communication is not merely a transfer of information but serves as a tool to influence and modify perspectives, frames of reference, or ways of thinking by introducing contextual shifts. Indeed, it fosters a dynamic and bidirectional interaction where partners influence each other: listening, observing, and understanding on one hand, and expressing and being understood on the other. This interaction thus involves both expressive and receptive aspects. "To communicate is to exist in a social world by positioning oneself as a subject," she concludes.

Albert Mehrabian, a professor of psychology at the University of California, highlights the multimodal aspect of communication through the 7%-38%-55% rule. In his study, he demonstrates that words contribute only 7% to the understanding of a message, while 38% is determined by voice tone, and 55% by gestures and facial expressions.

However, 70% of autistic individuals do not have access to verbal language. Moreover, since their sensory abilities are often impaired (e.g., a deficient perception of voice prosody), it becomes crucial to rely on gestural or visual aids to compensate for these deficits. This is the foundation of augmentative and alternative communication, an essential approach for facilitating exchanges with individuals with autism spectrum disorders. (Carlier, J., Martinez, J., Leman, M. F., & Pruvost, F., 2013)

4- Understanding and Valuing the Communication Methods of Autistic Children:

Although autistic children present profound communication disorders, they still retain the ability to communicate. Research by Wetherby and Prutting, cited by M.-F. Livoir-Petersen in *Les Approches thérapeutiques 1*, shows that autistic children develop their own means of communication. These methods, though often unusual, generally exclude fundamental elements such as joint attention and eye contact between interlocutors.

It is essential to recognize and value this unconventional communication because it reflects their unique way of perceiving the outside world, often in a more holistic and sensory manner. In her work, Uta Frith discusses the early signs of autism in very young children, highlighting the impact on communication. This can range from a complete absence of speech to a simple delay in language acquisition. Between these two extremes, some children use language in a manner that may be confusing to an unprepared listener.

Uta Frith also notes that autistic children exhibit stereotypical gestures and repetitive behaviours, which further complicate understanding, despite efforts from those around them. However, she asserts that communication remains possible, though often at a limited level.

Thus, even though their communication abilities are impaired, they remain present and deserve to be decoded and interpreted. It is up to the professional to identify each child's unique communication methods to facilitate exchanges and establish a functional relationship. As Jeannin (2009) explains, every attempt at communication, even if atypical, should be considered within the framework of appropriate intervention. (Jeannin, P., 2009, P15)

5- Forms of Communication Disorders in Children with Autism Spectrum Disorder Enter here:

Language and communication disorders in autistic children are consistent and manifest in various forms. These disorders can range from a complete absence of

language to the use of language that lacks communicative function, such as a string of words directed at others without the intention of exchange. However, certain specific traits are frequently observed:

Pronoun Reversal: The autistic child struggles to understand words whose meaning changes based on context. As a result, they often

- reverse personal pronouns, referring to themselves as "you" and addressing their interlocutor as "I."
- **Echolalia:** This phenomenon involves the repeated imitation of others' speech. In the case of direct echolalia, the child immediately repeats what they hear, making the repetition easily identifiable. On the other hand, delayed echolalia is more subtle, as the child repeats words heard after a delay of several hours or even days.
- **Difficulty with Abstract Terms:** The autistic child demonstrates an inability to use or understand abstract expressions or terms used outside their usual meaning. They tend to favour a literal and concrete interpretation of language, which is characteristic of autism.
- **Limited Understanding of Non-Verbal Language:** The analysis of facial expressions, gestures, or smiles is often deficient in autistic children. Additionally, the frequent absence of eye contact further hinders the interpretation of non-verbal communication. Cues from body language or voice intonation are not always perceived, which can lead to inappropriate responses. For example, an autistic child may smile in response to a verbal reprimand.

These characteristics highlight the communication challenges that autistic children face, requiring special attention to decode and understand their means of expression. (Veratti, C, 2013, p.16).

6- Intervention in Communication Disorders in Autistic Children:

Within the system we have established, the speech therapist works with each child on a weekly basis (in contrast to the educator and psychologists, who typically intervene multiple times a week). Furthermore, the speech therapist primarily focuses on various aspects of communication, with their training providing the distance needed to consider communication from these different perspectives: receptive and expressive language and the social use of language.

The speech therapist's role is particularly crucial when establishing a means of communication and at all key stages of acquisition in the fields of communication and language. This includes moments when it is necessary to adapt or renew the approach or therapeutic methods (e.g., when a child begins to speak, or when they produce words but do not yet combine them, in order to develop syntax). The speech therapist is also in close dialogue with another speech therapist who sees the child biweekly in a private practice setting. Within our system, the joint intervention of two professionals at home also allows the speech therapist to share their specific expertise with other professionals.

On the other hand, the speech therapist's perspective is significantly enriched by the approach of the educator and psychologists, whose observations regarding communication or other components (such as behaviour) are essential for adapting the therapy.

In general, with such young children, the speech therapist's priority is to engage the child in communication, meaning developing the child's ability to express their state of mind – primarily what they want – by helping them acquire and generalize the function of requesting.

What theory underpins this intervention? Autistic children not only have a social communication disorder but also exhibit behavioural disorders. These behavioural issues are, at least partially, caused by the frustration of being unable to communicate (understand and be understood).

Speech therapy is designed to improve social communication skills and teach children how to use these skills, rather than resorting to inappropriate behaviors or behavioral disorders. (Cuny, F., & Giuliani, C. 2014)

7- Methods Used to Improve Communication in Children with Autism Spectrum Disorder (ASD):

Initially, regardless of the child's level or means — which can vary greatly among our little patients — the "pairing" phase is essential for best aligning with the child's interests, gaining their cooperation, and promoting the emergence of communication skills.

The quality of "pairing" largely determines the quality of the work we will be able to do with the child. This phase is primarily about providing the child with enjoyable objects or activities, creating a positive and motivating environment. However, we try to introduce small demands fairly quickly so that the child perceives us as an intermediary between them and an attractive

object. For example, if the child enjoys putting objects into a container, we would add a lid with holes to the container and give them one object at a time. We would then try to get them to make eye contact before handing each object. This type of technique is easy to teach to parents as well.

The evaluation of reinforcers is also a crucial step. It is important to choose the most attractive objects for the child, but also to distinguish between those that can be integrated into their play and those that allow for learning development, versus those that only serve for self-stimulation and do not facilitate shared activities with the child (such as food-based reinforcers). Although these food-based reinforcers are not prioritized during the "pairing" phase, which aims to share as many activities as possible with the child, they can be useful for addressing certain challenging learning tasks for the child.

To implement and develop a communication tool, we rely on specific and proven techniques, particularly visual tools such as PECS (Picture Exchange

Communication System) and Makaton. These approaches are part of a broader, individualized stimulation program based on ABA (Applied Behavior Analysis) techniques. (Cuny, F, Giulani, C, 2014, p.274)

8- Developing Communication Methods Tailored to the Child's Needs:

The choice of communication method is made in collaboration with the entire team (home-based professionals, private practitioners) and the parents. The goal is to select the most accessible approach for the child, whether that involves signs, images (pictograms or photos), or oral language alone.

Regardless of the chosen method, the focus is initially placed on developing the request function, which can be expressed through various modalities. For a very young child or one at the early stages of intervention, this function may include eye contact combined with a gesture (such as a raised hand) or a vocalization. For children with significant cognitive difficulties, using objects as a communication tool is often more intuitive than using images. For example, a child might bring their shoes to indicate they want to go outside or hand over a glass to show they are thirsty.

The ultimate goal is to help the child adopt a more advanced and functional mode of communication, one that is tailored to their needs and easy to generalize. The use of signs can be an interesting option for children who do not yet understand the symbolism of images. However, it is crucial that this method remains understandable to as many people as possible, for example, by using signs from French Sign Language (LSF) or systems like Makaton.

Visual media, particularly the use of images, remains the most frequently employed method. Visual supports prove especially effective for many children with autism. In fact, for the majority of young patients receiving care, eye contact and imitation abilities are significantly reduced. Bell, J., & Condren, M. (2016)

9- Fundamental Skills for Multimodal Communication in Children with Autism:

The foundational skills for multimodal communication, essential for the rehabilitation of children with autism or pervasive developmental disorders (PDD),

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include: eye contact, joint attention, turn-taking, imitation, and pointing. Their development is prioritized in early interventions or for children with significant deficits.

Eye contact: According to Mazeau and Dalens (1998), early rehabilitation of eye contact is crucial. It starts with activities aimed at stimulating visual attention, followed by developing fixation and tracking. Playful activities, such as bubble-blowing, balloon play, or using brightly colored objects, are recommended to encourage visual exploration from the age of four.

Joint attention: The development of joint attention can be promoted through sensory activities, particularly tactile ones:

- Differentiated massages or manipulation of objects with varied textures (e.g., corrugated cardboard, fur, ice cubes).
- Use of olfactory materials, such as scent boxes, to capture and maintain attention.

These activities, guided by the therapist, aim to reduce self-stimulatory behaviors while enhancing interactions with the environment.

Connection with imitation: Training in joint attention improves immediate imitation (Nadel, 2005). These foundational skills for communication are also linked to the development of theory of mind, which is often impaired in children with autism, as noted by Baron-Cohen.

This framework helps initiate the basics of functional communication and encourages social interactions. (Malgouyres, B., & de CRÉMIERS, S., 2012)

10- Alternative and Augmentative Communication (AAC): An Approach to Address Communication Disorders:

Alternative and Augmentative Communication (AAC) plays a crucial role in compensating for severe language and communication disorders, particularly in individuals with autism spectrum disorder (ASD). Given the challenges in social interaction, whether verbal or non-verbal, the implementation of appropriate tools

facilitates expression and comprehension, thereby enhancing social participation and autonomy for those affected.

Depending on the severity of ASD and cognitive abilities, some individuals remain non-verbal or develop non-functional language. AAC provides a variety of solutions, ranging from sign language-inspired gestures to visual supports (pictograms, communication binders) and technological devices such as speech-generating devices and digital applications. The implementation of these tools is based on scientifically validated approaches, requiring close collaboration between professionals, families, and communication partners (Carlier, J., Martinez, J., Leman, M. F., & Pruvost, F., 2013).

The central goal of AAC is to promote functional communication, enabling individuals to express their needs, make choices, share emotions, and actively engage in their social environment. According to the participation model (Beukelman & Mirenda, 2020) and the principles of the Convention on the Rights of Persons with Disabilities (UN, 2006), every individual with a communication disability should have access to appropriate means of communication, regardless of their level of impairment. AAC tools are categorized into unaided means, such as gestures and signs, and aided means, ranging from low-tech supports (pictograms, binders) to high-tech devices with voice output and dynamic access to an extensive vocabulary. Each modality is selected based on the individual's

cognitive, motor, and communication skills while ensuring ease of use and adaptability to various social contexts.

The success of an AAC project relies on an initial dynamic and interdisciplinary assessment, followed by continuous support. Establishing a robust vocabulary, incorporating both core vocabulary (frequent and functional words) and specific vocabulary tailored to particular activities, is essential for effective communication. Additionally, technical adjustments such as eye-tracking control or assisted scanning can be considered for individuals with motor impairments.

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Finally, user motivation, training of communication partners, and awareness of social perceptions regarding AAC are key factors in the adoption and effectiveness of these tools. Recent research (Light & McNaughton, 2014) emphasizes the importance of a collaborative approach involving both professionals and families to ensure the optimal and sustainable implementation of AAC in the daily lives of individuals with communication disabilities (da Silva-Genest, C., & Masson, C., 2024).

Conclusion:

Addressing communication disorders in children with autism spectrum disorder requires a comprehensive approach that fosters collaboration between specialists and parents. The methods and strategies aimed at improving a child's ability to express their needs and engage in social interactions vary, with the use of augmentative and alternative communication (AAC) being one of the effective solutions that help alleviate the daily challenges faced by children. It is important to identify and implement interventions based on the individual needs of the child, while continually developing the professional skills of specialists and providing adequate support to the family. Through these integrated efforts, the quality of life for children with autism spectrum disorder can be improved, enhancing their interaction with their environment in a positive way.

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