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Therapeutic strategy in the form of communication in the children with the autism spectrum disorders - narrative review

Dominika Nowak, Magdalena Próchnicka, Michał Siwek, Adrian Giermasiński, Weronika Tuszyńska, Adam Zarzycki, Mateusz Komisarczuk

Chair and Department of Psychology, Medical University of Lublin, Chodźki street 7, 20-093 Lublin, Poland

Dominika Nowak; mika1200@onet.pl; ORCID: 0000-0002-0195-1102
Magdalena Próchnicka; maadiii1210@gmail.com; ORCID: 0000-0002-0641-2079
Michał Siwek; michal.siwek 21371488@gmail.com; ORCID: 0000-0002-0930-9333
Adrian Giermasiński; giermasinski.a@gmail.com; ORCID: 0000-0003-4442-9119
Weronika Tuszyńska; weron.stud28@gmail.com; ORCID: 0000-0002-2395-6748
Adam Zarzycki; adam.zarzycki 0709@gmail.com; ORCID: 0009-0004-9589-1842
Mateusz Komisarczuk; mateusz.komisarczuk@gmail.com; 0000-0002-0159-8142

Abstract

Autism spectrum disorders (ASD) is a neurodevelopmental disorder influenced by a number of genetic and environmental factors. It is characterized by a broad range of symptoms, particularly in the areas of communication and language, which pose a therapeutic challenge for both parents and therapists.

This article, based on a review of available studies on PubMed, presents therapeutic methods based on functional communication strategies and ways to implement them as a form of treatment for children with the autism spectrum disorders.

The major goals of ASD treatment are socialization and communication skills improvement and current treatments are not based on pharmacological therapies, but on behavioral therapies. Through appropriate speech development and practical communication strategies that are based on techniques like motivating the child to create eye contact with an adult, it is possible to realize the development of proper communication. These strategies are a form of therapy and allow for the improvement of the child's communication on multiple levels and shaping the social attitudes. Incorporating suitable therapeutic communication techniques enables the development and enhancement of social skills in children with autism spectrum disorders. Children with ASD benefit from appropriate communication because it helps them communicate their needs, understand the social norms, and improve their quality of life.

Keywords: communication; autism; therapy; child

Introduction

Autism spectrum disorder (ASD) is a neurological condition whose occurrence is conditioned not by a single and universal factor but by the co-occurrence of environmental and genetic factors. According to the

International Classification of Diseases ICD-10, ASD consists of: childhood autism, atypical autism and Asperger's syndrome. Clinically, the symptoms of autism manifest themselves in the form of the triad of autistic disorders concerning the child's functioning in the environment. The triad includes: deficits and dysfunction in communication (verbal as well as non-verbal), abnormalities in social development (especially the ability to participate in alternate social interactions) and dysfunctions in the area of general behavior patterns. Because of the varying severity and broad spectrum of symptoms, autistic disorders are individual in nature, and the mechanism of their onset remains unclear. Some factors such as sound, light, touch, smell, taste may be the causes of increased symptoms of autism due to the fact that individuals with the autism spectrum have a certain tolerance to stimuli coming from the environment and therefore their excess or abnormal form of transfer can cause them to feel irritable, anxious or withdrawn. However, this response is not always the principle and stimulation with such stimuli can also elicit in children with ASD feelings of intrigue, wonder, or enthusiasm. [1.2.3] Sensory disorders can take the form of hyposensitivity or hypersensitivity to particular types of stimuli. Speaking of auditory sensory processing, the presence of sudden or loud sounds made by peers while singing for example, can cause a person to cover their ears and push away those next to them. Hearing hypersensitivity, on the other hand, can be revealed by shouting, squealing or preferring loud places. Other examples of factors affecting the expansiveness of a particular type of behavior and the severity of symptoms in children with ASD might be : strong lighting, changing lighting, intense taste of food, specific types of fabrics from which clothes are made, sticky or adhesive foods, use of swings or trampolines, hugging or shaking hands.The peculiarities of sensory perception in people with the autism spectrum disorders provoke various behaviors, for example: covering ears, avoiding company, refusing to perform certain activities, reluctance, high activity and liveliness, tactile defensiveness, spitting out food, frequent squinting, watery eyes. [4] Moreover, studies show a link between the amount and quality of sleep and the severity of symptoms in children with ASD. Fewer hours of sleep and bad quality of sleep for children with autism also predicted the severity of daytime behaviors related to autism. Children who experienced uncomfortable sleeping environments like noise, light, etc. were also more likely to have communication problems and more general abnormalities in development that are commonly related to autism (e.g., rocking, regression in skills, delays in speech development, etc.). Facing the low amount of sleep and its bad quality, children are more likely to experience higher rates of stereotypy and to have more communication abnormalities. [5]

Communication skills in autism spectrum disorders

In ASD, the areas most differentiated in terms of the occurrence of symptoms are communication (both verbal and non-verbal) and language skills, i.e. expression and perception of speech but the degree of severity of these symptoms is a highly individual issue. [2] A considerable percentage of kids have trouble learning spoken language, but some people with ASD never acquire spoken language at all or only reach a very basic level of verbal speaking. Disorders of the language sphere result in the presence of certain difficulties such as underdeveloped social skills and problems with entering into interpersonal relationships or reduced abilities of adaptive action. In addition, people with underdeveloped verbal skills in the course of ASD often have problems with aggression and self-control, and are predisposed to exhibit atypical behavior or self-harming. [**6**] Dysfunctions of the language area also boil down to inability to read sentences at the level of context and difficulty in using words with multiple meanings. Patients do not interpret jokes or irony and their language is characterized by a small vocabulary and mistakes in the use of grammatical structures, for example by echolalic repetition of sentences repeated many times at home, slogans or advertisements. Moreover, they rarely use gestures or facial expressions and have trouble maintaining eye contact with their interlocutor. This problem also works in the opposite direction, meaning that children with ASD are unable to read the message of the gesture and the nature of the facial expressions of the person with whom they are communicating. This is why we notice in them a reduced capacity to understand environmental cues as crucial information for communication. Lack of knowledge and misunderstanding of interpersonal communication's role in daily life, as well as the rules that govern appropriate and mutual verbal and nonverbal communication, are major contributors to the difficulty in developing communication skills. [2]

Therapy strategies

Through its diversity, autism is hard to place within specific boundaries, therefore its diagnosis and the selection of appropriate therapy, tailored to the child's abilities, poses a major challenge for both parents and therapists. The therapeutic goal is to improve communication skills, adaptation to social life and also reducing

predisposition to self-destructive activities, improving language skills and learning to convey information about needs. The most common forms of treatment today are not pharmaceutical therapies but rather behavioral therapies, speech therapy, or musical techniques. One of therapy methods is PECS (Picture Exchange communication System), through which children with ASD learn to communicate their desires using cards, form sentences using action verbs/ features of objects, and training answers to questions through pictures. Another method is music therapy. It can improve skills in non-verbal communication, initiating certain behaviors and developing a certain kind of emotionality and social-emotional reciprocity. Despite the fact that disorders that occur in patients are not directly treated through pharmaceuticals, some behaviors resulting from the disorders, such as aggression, self-injury or hyperactivity require treatment through measures, such as antipsychotic drugs. Other drugs have also been tested, including: serotonin reuptake inhibitors, lithium, clonidine, thyroid hormones or antidepressants but the most beneficial effects have been attributed to antipsychotic drugs, as their use did not affect learning ability. Folinic acid has now been shown to have a positive effect on verbal communication in children with ASD, and beneficial anti-autistic effects of medicinal plants have also been observed, including ginkgo biloba extract due to its antioxidant. [3.7.8.9.10.11]

Functional communication strategies: functional assessment

The initial and most crucial phase of communication training is called functional communication. It entails a detailed examination of children's behavior, particularly the challenging behaviors that they exhibit and can be done through indirect and direct methods. The direct approach is to observe the children's behavior in specific circumstances and gauge the scope of their capabilities. The indirect approach entails obtaining details about a children's behavior from outside sources, such as parents or guardians. Then, it is vital to categorize behaviors into those that are difficult and those that should be changed. To determine the best course of therapy for the patient, taking into account their abilities, the information gathered during observation will be utilized. The next step is to create an appropriate therapeutic environment for the children, which will give them the opportunity to develop certain communication skills and focus on eliminating stimuli that precede difficult behavior. Starting therapy should go hand in hand with arousing motivation in the child to take up contact with an adult. Items liked by the child can be used for this purpose. [2.11]

Functional communication strategies: insisting on items

Training in functional communication should follow the premise of the child's skill progression. This means that instead of starting with the most challenging tasks straight away, we should progressively develop increasingly sophisticated competencies. Therefore, the initial focus is on acquiring verbal skills. Demanding given objects stems from the motivation the child has and is a tool for expressing internal needs. Initially, requesting items is in the nature of finger-pointing at a given object, and directing the gaze to the therapist/teacher, letting him know that the given object is an object of interest. At a later stage, this is joined by vocalization, which eventually takes the form of words: "give", "want", "pass". In order to motivate the patients we use objects that are a source of their interests, e.g. a teddy bear. It is important that the object is within sight, but out of reach of the child's hands. It will force the child to communicate its desire to get the object. In addition, we can also modify the therapeutic circumstances by changing communication partners, place or covering objects so that we implement new situations that require the child to react. [2.12]

Functional communication strategies: making a choice

In this method the most important thing is to recognize whether children have the ability to scan the space with their eyes and whether they make a conscious decision. That's why it is important to check if they look around searching the space with their eyes while choosing. Before realizing this strategy, it is necessary to establish with the child a method of selection, for example by pointing with a finger. We perform the exercise with the child by presentation of two objects. At first, we try to make one object the object of the child's desire (they can be favorite crayons, a teddy bear, blocks) and the other an undesirable object, thus making it easier for the child to decide. Then, to make this assignment even more challenging, we select two objects, one of which is a desirable object and the other is neutral.The child is given a choice of two equally significant objects at the very end. The constancy of your actions is crucial in this strategy. The therapist has the task of making the patient

aware that choice carries consequences - so if the child asks for a book, the teacher should give the book, despite the awareness that the child wanted something else. In this way the patient learns the phenomenon of cause-effect dependence. [2]

Functional communication strategies: answering

Children with autism spectrum disorder should have mastered the capacity to name particular objects and activities before beginning this strategy. Dialogue will be ineffective without such a skill. The ability to answer questions is very important, as it allows the conversation sequence to be maintained and is an active part of it. A child learning to answer questions explores the essence of the phenomenon of alternation of roles, so important in interpersonal communication. This strategy can be implemented using books with multiple illustrations, to which the therapist asks questions, such as "what do you see?", "what is the girl in the picture doing?". The range of questions can be expanded by asking not only about names and activities, but addressing the topic of family, preferences, the future, the past. [2]

Functional communication strategies: refusing, confirming

The form of refusal and confirmation that children choose, depends on the level of their development. In the case of refusal, initially the child pushes the object away or drops it, walks away, shakes his head and eventually says "no." In the case of confirmation, at first there is grasping of the object, nodding, then comes the development of the verbal component and answering "yes." In building this skill, it’s worth considering the participation of a third party so that they can support the nodding or turning of the child's head. For the aforementioned strategy, we can use colored cards with yes/no words or write these words on our own cards, which will guide the child to the right answer and allow us to train the habit of refusing or affirmation. Keep in mind that asking closed questions, especially several times in a row, can cause feelings of irritation in patients with poor or no understanding of speech and provoke the occurrence of difficult behavior. [2]

Functional communication strategies: asking questions

Naturally, the phenomenon of asking questions occurs in children when in the environment they notice something new that arouses their curiosity and a sense of under-information. When it comes to children with ASD, there is not always a desire to learn the secrets of the world around them, as they feel more overwhelmed by it. Also, misunderstanding of the need to ask questions during a communicative interaction stems in patients from not understanding the idea of the alternation of roles played by participants in a communicative event. If children already know how to answer basic questions they need to be encouraged to ask these questions to the therapist, for example through the use of graphic boards. At a later stage, the method uses games and activities that involve an element of concealment. We can use puns or guessing games for this and try to build tension at the same time through pauses in the successive stages of the game to release the curiosity of the patient. [2]

Parent in a therapy of child with ASD

Parents and children interact with each other constantly, throughout the child's developmental process, which is why it is so important for adults to act consciously. Clinically, a parent's participation in therapeutic intervention teaches them to be a co-therapist and a person who is actively involved in the process of the child with ASD new communication skills. Despite the fact that therapists often show emotional support for caregivers, providing parents with guidance, how to develop their own coping skills is not always at the forefront. Not all parents show equal ability and willingness to actively participate in intervention with sufficient intensity, or do not accept or fully understand their child's illness. In addition, parents of children with ASD tend to exhibit a lower sense of self-efficacy or belief in the ability to effectively raise their child on their own. [12.13] The role of the parent as a co-therapist not only strengthens the parent-child relationship, but also demonstrates better response to treatment through the presence and active participation of the parent in the recovery process. [14]

Discussion

Taking into account the above statements, it can be concluded that the therapy of children with autism is not one of the easiest, among other things, because it requires individualization of treatment and the use of behavioral methods. The nature of the disorders with which patients with ASD struggle may, to a varying extent and depending on the severity of symptoms, cause difficulties in the implementation of therapy and limit the use of behavioral methods in their full scope. A strongly limiting factor may be the patient's lack of cooperation with the therapist, resulting from impaired communication and social functioning. The individualization of therapy and the variability of the methods used in it also entail the necessity of building large study groups on the basis of which general conclusions could be drawn. Study is also limited by the small number of people properly trained to conduct therapy with patients with ASD, and the constantly developing methods of behavioral therapy and research on cause-and-effect sequences related to autism symptoms require retraining and experienced staff. Furthermore, individual and regular meetings with a therapist, as well as additional supplementation, generate considerable long-term costs for the family and require ongoing commitment, which creates additional limitations. Last but not least, parents can also be a limitation, in the case of acting as co-therapists, who may feel long-term stress related to their participation in therapy, frustration or fatigue with the treatment process.
However, these findings should be considered preliminary until treatment is evaluated in larger, multicenter trials of longer duration and require further research in the field of personalisation. Such a high variability of symptoms in patients with ASD requires a lot of personalized research and the use of a combination of behavioral therapies, supplementation and parental involvement depending on the specific case. [1.2.7.11.12.13]

Conclusions

Autism spectrum disorders are characterized by a range of symptoms varying in severity, the most diverse of which are disorders of language and communication. Introducing an appropriate therapeutic strategy, such as training in functional communication in a specific and tailored to the level of the child with ASD way enables the formation and improvement of social, communication or nonverbal skills in children with ASD. The parent's assistance and active role positively influences the relationship with the child and allows them to understand the nature of the disorder.

References

1. Crowell JA, Keluskar J, Gorecki A. Parenting behavior and the development of children with autism spectrum disorder. Comprehensive Psychiatry. 2019;90:21-29.
2. Sławek J. Rozwijanie komunikacji funkcjonalnej w terapii dzieci z zaburzeniami ze spektrum autyzmu. Poznańskie Studia Polonistyczne.Seria Językoznawcza. 2019;26(2):253-268. Polish.
3. Bahmani M, Sarrafchi A, Shirzad H, Rafieian-Kopaei M. Autism: Pathophysiology and Promising Herbal Remedies. Current Pharmaceutical Design. 2016;22(3):277-85.
4. Kranowitz C. The Out-of-Sync Child.Hartigama.2012:126-149.
5. Schreck K. Sleep problems as possible predictors of intensified symptoms of autism*1. Research in Developmental Disabilities. 2004;25(1):57–66.
6. Brignell A, Chenausky KV, Song H, Zhu J, Suo C, Morgan AT. Communication interventions for autism spectrum disorder in minimally verbal children. Cochrane Database Syst Review. 2018;11(11).
7. Frye RE, Slattery J, Delhey L, Furgerson B, Strickland T, Tippett M, et al. Folinic acid improves verbal communication in children with autism and language impairment: a randomized double-blind placebo-controlled trial. Mol Psychiatry. 2018;(2):247-256.
8. Santos P, Bordini D, Scattolin M, Rodrigues da Cunha Asevedo G, Cavalcante Caetano Sh, Silvestre Paula C, et al. The Impact of the Implementation of the Picture Exchange Communication System – PECS on Understanding Instructions in Children with Autism Spectrum Disorders. https://doi.org/10.1590/2317-1782/20202020041 (15.07.2022).
9. Charlop-Christy MH, Carpenter M, Le L, LeBlanc LA, Kellet K. Using the picture exchange communication system (PECS) with children with autism: assessment of PECS acquisition, speech, social-communicative behavior, and problem behavior. Journal of Applied Behavior Analysis. 2002;35(3):213-31.
10. Geretsegger M, Elefant C, Mössler KA, Gold C. Music therapy for people with autism spectrum disorder. https://doi.org/10.1002/14651858.CD004381.pub3 (15.05.2022).
11. Lew-Koralewicz A. Trening komunikacji funkcjonalnej (FCT) jako metoda prezentacji relacji dzieci lub komunikacji językowej. Głos – Język – Komunikacja. 2017;4:135-146. Polish.

12. Benson PR, Karlof KL. Anger, stress proliferation, and depressed mood among parents of children with ASD: a longitudinal replication. Journal of Autism and Developmental Disorders. 2009;39(2):350-62.
13. Karst JS, Van Hecke AV. Parent and family impact of autism spectrum disorders: a review and proposed model for intervention evaluation. Clin Child Fam Psychology Review. 2012;15(3):247-77.
14. Green J, Charman T, McConachie H, Aldred C, Slonims V, Howlin P, et al. PACT Consortium, Parent-mediated communication-focused treatment in children with autism (PACT): a randomised controlled trial. Lancet. 2010;19;375(9732):2152-60.