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BARBARA WINCZURA

Uniwersity of Wrocław

Early detection of autism spectrum disorders – risk symptoms, initial diagnosis, screening

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The diagnosis of autism within the first two years of a child's life is burdened by many difficulties. Even though many children belonging within autism spectrum disorders is characterised by similar traits typical for this disturbance, they are characterised by a high variability of the exhibited abilities and the dynamics of changes. Significant are also difficulties spanning specific symptoms that may in various children differ in intensity and level. The most significant symptoms for early recognition of ASD are deemed to be emotional and social deficits, disturbances in the development of speech and communication as well as atypical behaviour in the form of limited, repetitive behaviour patterns. In the first as well as the second year of life, the most commonly confirmed early signs of ADS refer to the lack of behaviour indicating the child's readiness to form social relations and to social communication, including in particular its reactions to its own name, limited eye contact, atypical facial expressions in social situations, the lack of emotional adaptation, limited interest in social impulses and poor vocalisation, as well as limited abilities to imitate, establish a common field of attention and the expression of attachment to the next of kin. In the second year of age, the atypical behaviour is manifested more clearly and may, although it must not necessarily, shine through in all areas typical for autism. The knowledge of these atypical behaviour patterns is used for the construction of screening tools. Early diagnosis is key for the efficient intervention, rehabilitation and therapy of a child.

KEY WORDS: autism spectrum disorders, autism risk symptoms, social communication and general communication disturbances, stereotypical, limited behaviour patterns, early detection of autism, initial diagnosis, screening tests

Introduction

Despite the fact that many children with Autism Spectrum Disorders (ASD) exhibit similar properties that are characteristic for this disorder, however, in the end they are characterised by a great variety of the exhibited abilities and by the dynamics of changes. Developmental changes influence the expression of symptoms[1]. The nosological categorisation and diagnosis of a child as being autistic is quite complex, in particular due to the differences in terms of various specific symptoms, which in various children might differ by intensity and level[2]. Both axial as well as secondary symptoms may express differently and emerge in various combinations[3]. A significant difficulty is found in the fact of uneven moment of emergence of the first symptoms (from birth until the 36th month), the number of these and their intensity over time, the circumstances, in which they emerge most frequently (including the influence of environmental factors), as well as the general psychological and physiological development of the child, frequently determined by co-existing disorders (comorbidity) and mental retardation[4]. According to the most recent data, 70% of persons with autism spectrum disorders may have one co-existing disturbance, and 40% of this population – two or more co-existing disturbances[5]. Despite the

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[1] E. Pisula, *Autyzm. Przyczyny, symptomy, terapia,* Published by Harmonia, Gdańsk 2010, p. 73.

[2] A.J. Cotugno, *Terapia grupowa dla dzieci z zaburzeniami ze spectrum autyzmu. Rozwijanie kompetencji i umiejętności społecznych*, Published by Fraszka Edukacyjna, Warszawa 2011, s. 13.

[3] M. Piszczek, *Kwestionariusz oceny kompetencji emocjonalno-społecznej (KOKE-S) wysoko funkcjonujących autystów i dzieci z zespołem Aspergera (część pierwsza)*, „Rewalidacja". Publication for teachers and therapists 2010, no. 1(27), s. 48.

[4] J. Błeszyński, *Autyzm a niepełnosprawność intelektualna i opóźnienie w rozwoju. Skala Oceny Zachowań Autystycznych*. Published by HARMONIA UNIWERSALIS, Gdańsk 2011, s. 57; B. Winczura, *Autyzm, autyzm atypowy a schizofrenia wczesnodziecięca*, [in:] B. Winczura (ed.) *Dzieci z zaburzeniami łączonymi. Trudne ścieżki rozwoju*, Published by Impuls, Kraków 2012, s. 86.

[5] *Diagnostic and statistical manual of mental disorders. Fifth edition*, (DSM-5), American Psychiatric Association, APA, Washington DC 2013.

neurobiological background of autism spectrum disorders, no biological markers were determined until now that would permit their usage in daily clinical diagnosis. The diagnosis is made based on the clinical image characteristic for ASD, the structured interview, for the purpose of confirmation or exclusion of possible comorbidities, as well as additional biochemical, genetic and imaging analyses, despite the fact that none of these individually may determine the ultimate diagnosis of autism spectrum disorders[6]. Despite much research on the dynamics of development of autism spectrum disorders, we still have very limited knowledge on the development of children with ASD in the first few months of their lives. Early evaluation of disturbances in little children is usually introspective and is most frequently based on information acquired from parents/close caretakers of these children. Despite the fact that these opinions are usually apt, perhaps even precise, it is difficult to pin down whether they always reflect the objective state of affairs. Numerous studies are being undertaken to determine the criteria of the best possible recognition of autism spectrum disorders in children at an early stage of development. Irrespective of the fact that symptoms of ASD shine through in the first two years of a child's life, proof concerning the time of emergence of the initial symptoms and their character, their intensity, remains limited[7].

Early symptoms of autism spectrum disorders

According to the DSM-5, the diagnosis of autism spectrum disorders requires the presence of clinical symptoms of ASD at an early stage in life, however, their lack at a later stage does not exclude

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[6] A. Rynkiewicz, M. Kulik, *Wystandaryzowane, interaktywne narzędzia do diagnozy zaburzeń ze spektrum autyzmu, a nowe kryteria diagnostyczne DSM-5*, „Psychiatria" 2013, 10, no. 2, s. 42.

[7] M. Skórczyńska, *Wczesne diagnozowanie autyzmu – perspektywy i dylematy*, [in:] B. Winczura (ed.), *Autyzm Na granicy zrozumienia*. Published by Impuls, Kraków 2009, s. 56; E. Pisula, *Autyzm. Przyczyny…*, op. cit., s. 81.

ASD diagnosis[8]. Studies show that the first signs of autism are noticeable between the sixth and 12th month of life. The most children to be diagnosed with autism in time is able to still make relatively correct eye contact and develop a social smile even in the sixth month of life, however, their frequency and quality change between the sixth and 12th month of life[9]. In this time, symptoms begin to appear such as: The lack of a proper reaction to their own name, no emotional interplay with other persons, the failure to show attachment, poor range of vocalisations, stereotypical behaviour patterns, atypical reactions to sensory stimuli, atypical exploration of objects. Development may also stop or recede[10]. The key areas for early diagnosis of ASD are deemed to be difficulties in social contacts and in communication, as well as specific, limited, repeating behaviour patterns, all of which remains in correlation with the diagnostic criteria of the DSM-5[11].

Difficulties in making social relations

The majority of observations show that the beginnings of emotional and social development in little children, in whom autism is suspected, may be disturbed, even though they also may be highly differentiated. In some of these, disturbances in the abilities of making emotional contact may be observed even before they conclude their sixth month of life. No exchange of content-adapted social actions and verbal messages or verbal and non-verbal messages occurs between the child and their next of kin[12]. Particular disturb-

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[8] L. Meng-Chuan, M.V. Lombard, B. Chakrabarti, S. Baron-Cohen, *Subgrouping the Autism "Spectrum"*: Reflections on DSM-5. PLOS Biology, 2013, 11(4), pp. 1–7.

[9] A. Steiner, T.R. Goldsmith, A.V. Snow, K. Chawarska, *Practitioner's Guide to Assessment of Autism Spectrum Disorders in Infants and Toddlers,* "Journal of Autism and Developmental Disorders" 2012, 42(6), s. 1184.

[10] A. Rynkiewicz, M. Kulik, *Wystandaryzowane, interaktywne…*, op. cit., s. 42.

[11] *Diagnostic and statistical manual of mental disorders. Fifth edition*, (DSM-5), 2013

[12] E. Pisula, *Małe dziecko z autyzmem, diagnoza i terapia*, Published by Gdańskie Wydawnictwo Psychologiczne, Gdańsk 2005, s. 32.

ances are seen in the area of social communication, mostly its non-verbal aspects. The earliest symptoms (indications) of autism spectrum disorders are:

- limited eye contact (disturbance arises before the sixth month of life),
- lack of interest in people, ignoring them, short time of looking at people (disturbance emerges around the end of the first year of life),
- lack of ability to alternately participate in interactions and limited abilities to initiate and support interactions (disturbance arises before the sixth month of life),
- no reaction to parent messages directed at the child (disturbance arises before the sixth month of life),
- no smile reaction in social situations, no other forms of exhibition of joy (before the sixth month of life),
- no emotional adjustment, emotional synchrony, no adaptation of facial expressions to the situation (disturbance arises before the sixth month of life),
- no reaction to the own name (disturbance emerges between the 8th and 10th month of life),
- no pointing (disturbance emerges between the 8th and 12th month of life),
- no demands to be held and hugged (disturbance emerges after the sixth month of life),
- no following a person or object with the eyes (disturbance emerges at the break between the first and second years of life),
- no complex social behaviours that would fuse observation, facial expressions, tone of voice and gestures (disturbance emerges after the sixth month of life),
- no understanding of socially-valid gestures (e. g. "bye-bye") (disturbance emerges at the break between the first and second years of life) (Baranek, Volkmar, Chawarska and Klin; Maestro, Muratori, Cesari, Pecini, Apicella, Stern)[13].

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[13] E. Pisula, *Od badań mózgu do praktyki psychologicznej AUTYZM*, Wydawnictwo GWP, Sopot 2012.

J. Osterling and G. Dawson have in their observations discerned four characteristic modes of behaviour, within the scope of which over 90% of children with autism aged 12 months differed from 10-month-old babies developing normally and 12-month-old babies with developmental retardation. They included:

– no looking towards others,
– no reactions to the own name,
– no pointing, no showing or giving objects[14].

Similar results were achieved in the research conducted by G.T. Baranek[15]. Among discrete symptoms of autism in babies aged nine to 12 months, included were:

– weak visual orientation (including non-social stimuli),
– delayed reaction to the own name,
– avoiding being touched by others.

Distressing behaviour patterns in children in the first year of life that may strongly correlate to a later diagnosis of autism include:

– limited social reactivity (e. g. reacting to the own name, looking at people, behaviour related to the creation of a common field of attention),
– atypical behaviour patterns related to sensory adjustment (e. g. frequent putting objects in the mouth, uncommon visual attention patterns, increased irritability)[16].

The most significant diagnostic indicator seemed to be the failure to look at other people and no reactions of the child to the own name. This problem is also noticed by parents, as it contributes to difficulties in the social communication with the child. With respect to reactions to the name, it can be observed that it must be repeated

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[14] J. Osterling, D. Dawson, *Early recognition of children with autism: A study of first brithday home videotapes,* "Journal of Autism and Developmental Disorders" 1994, 24, s. 250.

[15] G.T. Baranek, *Autism during infancy: a retrospective video analysis of sensory – motor and social behaviors at 9–12 moths of age,* "Journal of Autism and Developmental Disorders" 1999, vol. 29, no. 3, s. 220.

[16] S. Goldstein, J.A. Naglieri, S. Ozonoff S. (ed.), *Diagnoza zaburzeń ze spektrum autyzmu,* Wydawnictwo Uniwersytetu jagiellońskiego, Kraków 2017, s. 162.

many times, before the child turns their attention to the person pronouncing it. Such a delay, and at times even a lack of reaction, is considered to be one of the informative signals about a possible threat of autism already in babies aged eight-nine months. Significant is also the discovery that already in the 12th month of life, between autism-risk group children and children developing properly, differences are seen in the area of complex communication behaviour patterns – such as the fusion of cooing with pointing towards or expressing words and pointing[17].

Around the end of the first year of life, noticeable is also the lack of play related to imitation (e. g. playing "peek-a-boo", waving "bye-bye" when parting). This correlates closely with the inability to imitate gestures and disturbed development of social skills in the child[18]. It was noticed that these children seem uninterested or not aware of the interpersonal aspects of relations with others. Even if they can be engaged to participate in certain types of activities, they still take on a passive attitude within such participation[19]. They do not observe what others are doing. They are not interested in the activities that others perform. They do not imitate the behaviour of others because they are not aware of what is going on with others. They do not share their interests, desires, with others[20].

In the second half of the first year of life, the children from the autism spectrum risk group were also observed to have difficulty establishing a common field of attention. They are expressed in the

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[17] E. Werner, G. Dawson, J. Munson, J. Osterling, *Variation in early developmental course in autism and its relations with behavioral outcome at 3–4 years of age,* "Journal of Autism and Developmental Disorders" 2005, 35, s. 340–348.

[18] G. Jagielska, *Objawy autyzmu dziecięcego,* [in:] J. Komender, G. Jagielska, A. Bryńska (ed.), *Autyzm i zespół Aspergera*, Wydawnictwo Lekarskie PZWL, Warszawa 2009, s. 33–50.

[19] Pisula E., *Autyzm – fakty, wątpliwości, opinie*, Published by WSPS, Warszawa 1993.

[20] B. Blok, Z. Brzeska, B. Ignaczewska, *Diagnoza i wspomaganie rozwoju dziecka z autyzmem w Specjalnym Ośrodku Rewalidacyjno-Wychowawczym dla dzieci i młodzieży z autyzmem,* [in:] T. Serafin (ed.), *Wczesne wspomaganie rozwoju dziecka od chwili wykrycia niepełnosprawności do podjęcia nauki w szkole*, published by the Polish Ministry of National Education and Sport, Warszawa 2005, pp. 171–198.

limited ability of the child to receive social impulses, the lack of interest in people and the lack of reaction to when somebody calls the child by name[21]. Infants from the autism spectrum risk group do not follow the index finger of the parent with their eyes, even if the child is aided in locating the direction of the gaze with a physical suggestion, for instance, when the child's arm is touched before showing or when the child is called by name. There are children, who in the end look in the indicated direction, but without exchanging glances with the parent and without visible emotional expression[22]. They are not able to direct the attention of another to specific objects or events, or monitor the attention of another or notice what the other person wants to show[23], Children with autism do not see the relation between looking at something and wanting to have it, manipulate it out of curiosity. They have difficulty reading the content of information contained in the direction of a gaze[24].

M. Sigman et al.[25], as a result of observations and conducted research, have discerned the main atypical behaviour pattens of children in social development until the 18th month of age. They have concluded that these are warning signs for an early detection of autism. They included among these:

- the inability to participate in social interactions,
- failure to establish a common field of attention (pointing, following with the glance),
- limited ability to imitate,
- disturbed recognition of emotions and emotional synchrony,
- limitations in expressing attachment.

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[21] E. Pisula, *Autyzm. Przyczyny, symptomy…*, op. cit., pp. 85–87.

[22] M. Skórczyńska, *Wczesne diagnozowanie autyzmu…*, op. cit., pp. 45–46.

[23] E. Pisula, *Autyzm u dzieci. Diagnoza, klasyfikacja, etiologia*, Wydawnictwo naukowe PWN, Warszawa 1999.

[24] K. Markiewicz, *Charakterystyka zmian w rozwoju umysłowym dzieci autystycznych*, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2007, pp. 96–99.

[25] M. Sigman, A. Dijamco, M. Gratier, A. Rozga, *Early detection of core deficits in autism*, "Mental Retardation and Developmental Disabilities Research Reviews" 2004, 10, pp. 221–233

In general, it is difficult to say what exactly causes the first distress in the family. Usually, the symptoms gain momentum only when minor observations begin to multiply, even when none of these does not seem significant. A diligent analysis of family video recordings had shown that from the temporal perspective, initially subtle symptoms become obvious, significantly clear already at the end of the first year of life.[26] The first disturbed social skills of a child in the contact with the mother are evaluated to be a signifycant signal announcing the development of autism.[27] The disturbing emotional and social symptoms most frequently reported by parents of small children are:

– high emotional irritability,
– the preference of loneliness,
– ignoring others, in particular next of kin.

The child seems not to be interested in physical contact with the mother, it even defends itself from her, recedes from her, even demonstratively pushes her back[28]. It usually does not like modes of play that involve hugging or frolicking. There exists a large group of children that do not allow any kind of physical contact at all. The typical problem is the lack of or limited eye contact, frequently described as the so-called "empty" gaze. The child exhibits limited interest in the human face, the perception and voice of the mother[29]. It doesn't fix its gaze on the mother's face, it does not follow her with the look, its gaze wanders in space, it does not react to her image, in particular to her smile or her gestures, with emotional animation. Characteristic are disturbed facial expressions ("mask-like

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[26] U. Frith, *Autyzm. Wyjaśnienie tajemnicy*, Gdańskie Wydawnictwo Psychologiczne, Gdańsk 2008, p. 32.

[27] H. Jaklewicz, *Autyzm dziecięcy*, [in:] A. Popielarska, M. Popielarska (ed.), *Psychiatria wieku rozwojowego*, Wydawnictwo Lekarskie PZWL, Warszawa 2000, p. 118.

[28] E. Pisula, *Wspomaganie osób z zaburzeniami należącymi do autystycznego spektrum w perspektywie psychopatologii rozwojowej*, [in:] J. Trempała (ed.), *Psychologia rozwoju człowieka,* Wydawnictwo PWN, Warszawa 2011, p. 449.

[29] J. Błeszyński, *Autyzm a niepełnosprawność intelektualna…,* op. cit., p. 61; D. Senator, *Przejawy autyzmu w pierwszym roku życia*, „Pediatria Polska" 2006, no. 2, p. 128.

face"), the lack of expression accompanying a look, rare smiling and the typical inability to assume a body position indicating the readiness of and the will to be taken in the arms[30]. The social smile appears rarely, at times it looks artificial, as if pasted on. The child does not react when called by name, with parallel attention to other ambient sounds[31]. A visible deficit are also difficulties in the imitation of emotional conditions of others. The inability to share joy, sadness, pain, fear with others. In times of distress, threat, it does not seek comfort in the next of kin, and does not offer it, even seeming as if unaware that it is at all possible, ignores or wrongly interprets the emotional behaviour patterns of their next of kin, does not express care about the feelings and emotions of others. It does not differentiate between the next of kin and objects it is fascinated with. It decidedly prefers remaining in a world of objects than a world of people. This is accompanied by an observed short time of looking at people[32]. The child never or rarely shifts its gaze from the object to the fact of the person. Studies that analysed the direction of the gaze of children indicated that children with this disorder less frequently look in the eyes of the figures they are watching, but more frequently follow their moving lips and the remainder of the body[33].

Observed are also specific, limited forms of making contact with people. Some children take on strange postures when in contact with others, e. g. always stand sideways, with their back to any person standing closely, remove themselves from others to a significant distance, squint, cover their eyes. At times, to make contact, they utilise objects of significance to them, e. g. blocks, balls, a piece of cord[34]. Typical is also the lack of vocal-emotional expression, like

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[30] L. Wing, *Związek między zespołom Aspergera i autyzmem Kannera*, [in:] U. Frith (ed.), *Autyzm i zespół Aspergera.* Warszawa; Wydawnictwo Lekarskie PZWL, Warszawa 2005, p. 117.

[31] D. Senator, *Przejawy autyzmu…,* op. cit., p. 129.

[32] P. Randall, J. Parker, *Autyzm. Jak pomóc rodzinie*, Gdańskie Wydawnictwo Psychologiczne, Sopot 2010, pp. 99, 146.

[33] Pisula E., *Wspomaganie osób z zaburzeniami…,* op. cit., p. 448.

[34] Pisula E., *Małe dziecko z autyzmem…,* op. cit., p. 69.

"ooo", "uu", an empty or limited range of interaction gestures, e. g. waving "bye-bye" with the hand and the lack of proper gestures and expressing emotions through body position. As a consequence, observed is a limited range of social behaviours joining the gaze, facial expression, the tone of voice and gestures. The child rarely exchanges messages with the partner when playing together. It prefers playing alone, without contact with people, with the play usually being sensory-motor and/ or ritual in character[35]. The child usually engages in relations because it wants to satisfy its desires, e. g. it wants to get a toy, a treat, frequently utilising for this purpose the hand of the person standing next to it (treating the hand of the adult as a tool, a prosthesis, to achieve its goal)[36]. Parents indicate that their child is overly calm, quiet, withdrawn from relations, exhibits limited activity and that it is not interested in its environment[37].

An analysis of video recordings from first birthdays of children to later be diagnosed with autism had revealed that these children differ from healthy peers in many characteristic traits. Observed was mainly the lack of reactions to their own name, no proto-declarative pointing, not observing the faces of others when they point to an object. A high degree of risk of emergence of autism is related to behaviour patterns that shine through between the 18th and the 24th month of life. These include:

- isolation,
- no interest in children, not imitating them,
- no co-shared attention, no proto-declarative pointing,
- no bringing and showing to parents of various objects that interest the child,

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[35] Pisula E., *Wspomaganie osób z zaburzeniami…*, op. cit., p. 449; E. Wiekiera, *Strategia postępowania z dziećmi autystycznymi, Przekład z „Engagement", Poradnik praktyczny dla rodziców,* Wydawnicwo Krajowe Towarzystwo Autyzmu Oddział w Krakowie, Kraków 1995, p. 13.

[36] H. Jaklewicz, *Autyzm dziecięcy…*, op. cit., p. 119.

[37] E. Pisula E., *Autyzm u dzieci. Diagnoza, klasyfikacja, etiologia*, Wydawnictwo PWN, Warszawa 2000, p. 117.

– no reaction of a child who is called. A study conducted by S. Maestro, F. Muratori, A. Cesari et al. showed that 87% of children to be diagnosed with autism at a later age clearly exhibited these disturbances in development and behaviour[38].

Gradually, along with the progress of development, the child shows further disturbing signs. Around the second year of age, the problems most frequently indicated by parents/ close caretakers of children to later be diagnosed with autism are: the child does not have close relations with others in the family, does not greet, does not react spontaneously to the parent, close taker when they see them, expresses emotions weakly or not at all, or does this in an atypical manner, does not use gestures to make social contacts, is not able to initiate play with toys, when instructed by an adult it can play with objects, however, it does so rarely of their own accord, is not interested in children or may even avoid them, does not react to verbal or non-verbal attempts at making contact with it, has limited abilities of imitation and does not participate in games involving imitation[39], does not express readiness to play together with children, is not interested in social play, attachment to others gains atypical forms, mainly as attachment to routines related to certain persons, however, it has no traits of typical emotional and social attachment[40].

The dynamics of course of disturbances in the social development children from the autism risk group shows significant variability and multiple faces. There is no child showing all symptoms, and in turn their limited intensity must not necessarily mean that in the future the child will be diagnosed with ASD. There are also children, in which the symptoms of autism spectrum disorders are obscured by additional problems, for instance, attention deficits,

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[38] G. Jagielska, *Objawy autyzmu dziecięcego…,* op. cit., p. 42.

[39] E. Pisula E., *Autyzm u dzieci…,* op. cit., s. 118; A. Wolski, *Diagnoza autyzmu u małego dziecka – implikacje do pracy w rodzinie,* „Rewalidacja". Publication for teachers and therapists, 2010, no. 2(28), p. 24.

[40] E. Wiekiera, *Strategia postępowania…,* op. cit., p. 13; A.J. Cotugno, *Terapia grupowa dla dzieci…,* op. cit.

psychological and motor hyperactivity, disturbances of fear and others. Diagnostic problems obviously show in extreme cases. If a child is characterised by a low level of cognitive abilities, it is difficult to state, whether the emotional and social disturbances correspond to its mental age, or are these more intense than in case of its other developmental abilities[41]. In addition, certain behaviour patterns, in terms of which small children with ASD differ from their correctly-developing peers are related to mental or speech retardation. Ever more frequently, as well, there emerges a group of children with mild or atypical symptoms of autism[42]. Disturbances in the socio-emotional sphere are of key importance for the clinical image of autism spectrum disorders, whereby the manifestation of symptoms changes with age and with the child's development. Delays in terms of social abilities are stronger predictors of an autism diagnosis than of delays in communication ability[43].

Speech and communication disturbances

One of the most frequent symptoms in children suspect of autism are disturbances in the development of speech and communication. The first diagnostic step in this regard is an audiometric evaluation. Hearing damage occurs more frequently in children, who were hospitalised in intense neonatal care wards. Screening tests of newborns permit early detection of reduced hearing sharpness[44]. Analyses of video recordings indicate that already in the first twelve months of life, babies diagnosed with autism had deficits in communication. Most parents indicate no development of speech or delayed speech development as the first cause of their concern. In

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[41] U. Frith, *Autyzm. Wyjaśnienie…*, op. cit., p. 33.

[42] M. Skórczyńska, *Wczesne diagnozowanie autyzmu…*, op. cit., p. 56.

[43] S. Goldstein, J.A. Naglieri, S. Ozonoff (ed.), *Diagnoza zaburzeń…*, op. cit., p. 25.

[44] M. Skórczyńskka, *Autyzm a opóźnienie rozwoju,* [in:] B. Winczura (ed.), *Dzieci z zaburzeniami łączonymi. Trudne ścieżki rozwoju,* Published by Impuls, Kraków 2012, p. 15.

a study conducted by E. Coonrod and W.I. Stone included a group of parents (44 persons) of children aged 24–36 months, including 22 children diagnosed with autism and 22 children diagnosed with developmental delays (DD), this problem was indicated at 72–98%. In other studies by the same authors, delayed speech development was a cause of concern for 91% of parents of autistic children and 77% of parents of children with developmental delays. Parental concern is also caused by a significant reduction in the progress of development (e. g. no first words appearing after the cooing period) or a loss of skills gained formerly by the child. In 20–35% of cases, regression is indicated, in the form of loss of words, vocalisations or non-verbal communication skills (e. g. through gestures or eye contact)[45].

Already in the first year of a baby's life, observed may be particular difficulties in pre-verbal communication. Studies conducted by Ch. P. Johanson and S.M. Myers (2007) indicate that this is: the lack of alternating vocalisation between the baby and the parent, the lack of reaction to the voice of the mother, father or any other next of kin, no vocal/ emotional expressions like „ooo", "uu", a delayed range of cooking (after the ninth month of life, or a lack thereof until the 12th month of life), poor vocalisation, disturbed language prosody, minor or lacking repertoire of gestures (e. g. waving "bye-bye", finger-pointing), no gaze directed at others, no coordination between the gaze, facial expressions, gestures and the sounds produced[46].

Considering the limited communication function, children experiencing early development of autism in the pre-verbal phase utilise atypical modes of communication. They do not exhibit interest in the spoken word or any other sounds, they make the impression, as if they had hearing problems. The cry of a baby from the autism risk group seems to be devoid of expression. Cooking does not emerge

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[45] M. Skórczyńska, *Autyzm a opóźnienie…,* op. cit., p. 23.

[46] M. Skórczyńska, *Wczesne diagnozowanie…,* op. cit., p. 48; E. Pisula, *Wspomaganie osób…,* op. cit., p. 449.

at all or emerges much later, it is less varied, lacking expression, without modulation that would be akin to a conversation. These babies do not use their voice to attract attention to them. A significant group of children does not speak at all, and in those that utilise speech, its development is usually not only delayed, but also impaired[47]. According to P.A. Filipek et al. (1999, 2000) the following may be considered signs of delays in the development of speech in babies from the autism risk group:

- no pronunciation of words by the baby showing comprehension after the first year of life,
- no construction of simple sentences after the second year of life (no two-word sentences pronounced spontaneously after the 24th month of life),
- no development of speech that serves communication with others,
- regression in the development of speech or social abilities at any age[48].

Babies suspect of autism communicate mainly or exclusively for the purpose of control of behaviour of others when they want to ask for something or reject something. There is no communication directed at turning somebody's attention to an object, a phenomenon or person. This deficit is a characteristic trait of autism and is not symptomatic for children with development delays. Babies in this group of disturbances have difficulties acquiring conventional and symbolic aspects of communicating[49].

Apart from this, they never or rarely intentionally use gestures or vocalisations to convey an information to someone, and have difficulty communicating messages using their gaze. They do not try to express their emotions through facial expressions, they do not nod when agreeing to/ with something, nor do they smile to aid social communication. They also do not respond to such signals

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[47] H. Jaklewicz, *Autyzm dziecięcy…*, op. cit., p. 119.

[48] Skórczyńska M., *Wczesne diagnozowanie…*, op. cit., p. 41.

[49] Skórczyńska M., *Autyzm a opóźnienie…*, op. cit., p. 24.

directed at them. Coping with the lack of skills necessary to satisfy their needs, they sometimes use the body of another person (most frequently the hand) as an object, for instance, they guide the object they desire, pushing the hand in that direction. At times, the role of communication is fulfilled by aggressive behaviour, by screaming or crying[50].

The majority of autistic babies make the impression as if they did not comprehend what was spoken to them. Observed are disproportions between the readiness to repeat words, name objects, and the capacity to comprehend. According to reports of parents, approximately 25% of children aged 12 or 18 months express individual words. the first signs of comprehension of words in half of autistic children do not emerge before they reach the mental age of two years and six months. The capacity to comprehend words on a level characteristic for a child aged 16 months is reached by autistic children already at a mental age of four years. In terms of expression of words alone, the difference is smaller, and the delay fits in the range of eight to 19 months[51]. T. Charman et al., conducting studies on reactions of autistic babies to tree types of messages (their own name, a prohibition ("no") and a statement ("this is mum/ dad")) indicated that just half of autistic children aged less than two reacted to their own name, 70% would respond correctly to the prohibition of „no", and 30% understood the message "this is mum/ dad". Only 30% of children aged two years imitated words, and 15% were able to name objects. It was only at the age of four years that almost all studied autistic children reacted to their own name and understood the meaning of the word "no". Just over 80% of children would repeat words, but still only 52% would name objects[52]. In general, speech comprehension in autistic children is

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[50] Pisula E., *Autyzm. Przyczyny…*, op. cit., pp. 43–44.

[51] Pisula E., *Małe dziecko…*, op. cit., p. 36.

[52] Pisula E., *Zaburzenia komunikacji u dzieci z autyzmem,* [in:] *Kiedy mózg pracuje inaczej…– postrzeganie, ruch, emocje, komunikacja,* „Zeszyty Naukowe" 6 for the International Conference organised by the Polish Foundation for Disabled Children „Promyk Słońca", Wrocław, December 5th, 2008, p. 43.

significantly delayed. At a layer time, the child may experience various levels of impairment, beginning with a total lack of speech comprehension, through the comprehension of instructions within a specific context or speech supported by gestures, all the way to discrete disturbances concerning the understanding of abstract concepts, metaphor, jokes[53].

Approximately 25–30% of children with ASD start pronouncing their first words around the first year of life, but frequently between the 15th and 24th month of life they stop speaking, and their verbal expression boils down to a few messages, mainly those that aim at satisfying their current needs. This regression may also encompass the loss of the ability to communicate through gestures (waving, pointing, etc.) or social communication abilities (eye contact, reactions to praise). The regression may be gradual or sudden, it may overlap with subtle, pre-existing developmental delays or an atypical course of development (e. g. uniquely intense interest for certain objects or other stimuli that are not social in character in the first year of life). The regression in the development of speech is related to the child's withdrawal from social contacts and protection against changes, the rigidity of behaviour, sleep disturbances or problems eating[54].

In approximately ¾ of children with autism that utilise speech, echolalia may be observed[55]. Such speech does not entail any sort of intention of communication and entails the immediate or delayed repetition of words, the first or last syllables or sentences pronounced by someone else. At times, the child may repeat *a sentence directed at them or heard by it in the grammar form and in the tone of voice, in which it was* formulated, for instance "would you like a piece of candy?". Echolalic statements are repeated by the child with precise intonation and melody in which they were pro-

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[53] G. Jagielska, *Objawy autyzmu dziecięcego*…, op. cit., p. 39.

[54] M. Skórczyńska, *Wczesne diagnozowanie*…, op. cit., pp. 48–49.

[55] J. Błeszyński, *Czy echolalia w autyzmie jest problemem komunikacyjnym?,* [in:] B. Winczura (ed.), *Autyzm. Na granicy zrozumienia,* Wydawnictwo Impuls, Kraków 2009, p. 106.

nounced. They are unrelated to the situation and do not fit in the context of the conversation going about the child[56]. In an autistic child, echolalia may remain the main mode of expression and continue throughout its life. This means that the child is unable to independently create a statement, and such statements may be understood as please, protest or confirmation of something. Accordingly, the interpretation of such messages is not simple and requires good knowledge of the child. The speech of autistic children frequently includes so-called language stereotypes. The child repeats certain words, phrases, the content of advertisements, fragments of films, in particular children's stories or television programmes, multiple times. Such statements by the child usually do not serve communication and their functions are closer to other stereotypical behaviour patterns. The differences in speech also apply to atypical intonation, tempo, the rhythm of the statements and the limited and uneven vocabulary. Additionally, characteristic are difficulties with using personal pronouns. They refer to themselves "you" or "he", they make mix up pronouns describing others. Such mistakes may emerge throughout the development of speech in healthy children, but in autistic children they transgress typical developmental and temporal time frames[57]. Some autistic children have trouble introducing statements to functional speech. For instance, they have memorised the names of colours, shapes, numbers or letters, but they are unable to indicate them unless asked in a manner that is different than usual. They master speech in a schematic and rigid way. Learning the meanings of words, they tie them to specific objects, for instance, the term "man" may be related to a specific person, and "cat" to a specific cat[58].

The level of development of speech and communication abilities are one of the indicators of the further course of development of the child. The earlier and the better speech develops, the better the de-

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[56] H. Jaklewicz, *Autyzm dziecięcy…*, op. cit., pp. 119–120.

[57] E. Pisula, *Autyzm. Przyczyny…*, op. cit., p. 52.

[58] M. Skórczyńska, *Wczesne diagnozowanie…*, op. cit., p. 48.

velopment prognoses are. In a small group of children, where slight delays/ impediments in speech are observed, autism may remain undiscovered all the way until pre-school age, at which time difficulties in making social relations with peers will become visible[59].

Stereotypical, repetitive behaviour patterns

Children with the autism spectrum may demonstrate aypical behaviour in various areas, e. g. strange mannerisms, unique bonds with objects, obsessions, compulsions or stereotypical behaviour. approximately 5% of parents express distress because of stereotypical behaviour patterns of their children. Even though they notice this atypical behaviour of the child early, however, many of them are unable to precisely describe its character and causes. Most frequently they name such behaviour in the context of fits of bbad mood, excessive liveliness, the lack of co-operation, not playing with toys, excess sensitivity to certain stimuli[60]. Parents indicate that their children frequently endlessly repeat the same movements. This is most frequently: flapping arms, specific movements of hands or fingers (snapping the fingers, clapping), rocking sideways or back and forth, throwing up the arms, spinning around, walking along a circle, hitting [something] with the head, waving the hands close to their face. Even though these activities constitute a form of self-stimulation, they need not necessarily always be for them a source of joy itself, just the opposite. The statements by parents indicate that a certain group of children, when performing these activities, frequently shows signs of distress, crying, screaming. In certain cases, stereotypical movements of children may be a reaction to stress from contact with the environment, in which the child develops daily[61].

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[59] E. Pisula, *Autyzm. Przyczyny…*, op. cit., p. 53.

[60] E. Pisula, *Małe dziecko z autyzmem…*, op. cit., pp. 61–62.

[61] P. Randall, J. Parker, *Autyzm. Jak pomóc…*, op. cit., p. 61.

Most stereotypical movements, however, are sufficiently burdensome that they hinder and prevent the execution of daily activities and learning new skills. Stereotypical movements, even though they are highly characteristic for a minor group of children from the autism risk group, they are not a specific property, as they are also present in children with significant mental disabilities and/ or severe sensory disturbances. Even correctly-developing babies, in particular before they master the skill of speaking fluently, may transitionally flap their arms when excited or frustrated. Stereotypical behaviour patterns related to ASD in early years of life of children emerge as indicators of such behaviour. Until the conclusion of the twelfth month of life, stereotypical movements are present along with general distress and focus mainly on movements of hands and the head. The activity of such children most frequently entails repetitive regular motions, e. g. scratching of their quilt or cot, knocking on an object, rocking back and forth or even hitting their head on hard padding[62]. After the twelfth month of life, stereotypical behaviour patterns intensity, when the environment is disturbed or when the routine changes. This behaviour covers mainly jumps and spinning around, however, also knocking on objects and making them spin. There emerges intense fear in situations changing the stereotypical routines present until that time. Stereotypical play, lonely play is mainly joy. The child plays most frequently with mechanical toys that may be spun around or knocked on[63]. Usually, it repeats the same activities, aligns blocks, cars or other toys or just their fragments in rows. Noticeable is the lack of spontaneous activity. It was determined that the difficulties in controlling own activity are particularly clear in autistic children during free play.

Around the second year of life, stereotypical behaviour patterns emerge much more clearly, and their repertoire expands decidedly. The focal point in the child's behaviour is taken up by: moving of the hands or fingers (waving, fanning, flapping) in the peripheral

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[62] M. Skórczyńska, *Wczesne diagnozowanie…,* op. cit., p. 50.

[63] J. Błeszyński., *Autyzm a niepełnosprawność…*, op. cit., p. 97.

areas of the field of view, persistent staring at a specific object attracting attention, walking on toes and/ or long-term smelling or licking of inedible objects. Instead of soft, plush toys, they prefer hard objects such as: pens, flash-lights, keys, figurines, cords, parts of toys, e. g. car wheels, doll legs. They also insist on holding these objects the entire time, even though they are used by the children for playing rarely. Behaviour signifying fear and highly expressive reactions gain momentum. Longitudinal studies of children in the risk group conducted by C. Lord discovered that in over 87% of children diagnosed as autistic at three years of age, the parents described the presence of mannerisms spanning movements of arms and hands and specific sensory interests at two years of age[64]. The author notes that such behaviour, however, is simpler to discern in three-year-olds than in two-year-olds diagnosed with autism. The parents of older children notice these deficits more frequently than parents of younger children. It is unknown, whether this happens because the children are unable to cope with them, or because autistic disturbances increase more significantly between the age of two and three years[65].

Fascination of specific objects and using them not as intended, even to the point of obsession, may be noticed in autistic children. If these objects are consciously removed or lost, the children may express deep distress or even fits of rage. At times, obsessive interest applies to bus routes, train timetables, numbers or figurines. Over 60% of children express attachment to the daily routine and rejects any changes to rituals they know in their closest environment. This applies, for instance, to activities related to going to bed, visiting stores always in the same order, travelling to specific places always along the same route, or drinking from a specific cup. They insist on having a fixed plan of the day. Behaviour is characterised by a lack of flexibility. In case of attempts at the introduction of any changes, even minor ones, not noticeable for others, the children may react

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[64] M. Skórczyńska, *Wczesne diagnozowanie*…, op. cit., pp. 50–58.

[65] E. Pisula, *Autyzm u dzieci…*, op. cit., p. 54.

suddenly, expressing distress, screaming, crying[66]. The child's protests may quickly take the form of aggressive behaviour. These include hitting [something] with the head, biting hands, putting fingers in ears and eyes, scratching the body, etc. This behaviour may lead to significant injuries. They may be caused, among others, by frustration caused by ineffective attempts at communication, the distress experienced in a new environment unknown to the child or due to being bored, tired, due to lack of sleep, due to hunger or pain[67].

Fixed, stereotypical behaviour in children with the autism spectrum may change as the child develops, and may take on various forms. The limited range of behaviour patterns remains related to the level of mental development of the child. Children characterised by a more limited level of development more frequently smell, lick or touch objects, and children characterised by a higher level of intellectual development more frequently repeat complex activities and prefer other forms of activity. There is also data indicating that stereotypical behaviour is significantly more frequent in little children with autism than in their peers with other developmental or behavioural disturbances or in children from the risk group but not diagnosed with autism. All kinds of atypical modes of behaviour of a child are highly troublesome and tiring for its environment. They cause difficulties in the area of upbringing and increase the level of stress in the child's family. They also constitute an external, easily noticeable sign of atypical development and thus stigmatise. A frequent descriptor of such behaviour of a child is "weirdness". An analysis of the limited behaviour patterns in little children aged less than two years had shown that their presence may be highly useful in diagnosing autism[68]. Repetitive, stereotypical behaviour patterns and a limited and schematic repertoire of behaviour are treated as one of the axial properties of ASD.

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[66] P. Randall, J. Parker, *Autyzm. Jak pomóc…*, op. cit., pp. 101–102.

[67] M. Skórczyńska, *Wczesne diagnozowanie*…, op. cit., p. 51.

[68] E. Pisula, *Autyzm. Przyczyny…*, op. cit., pp. 56–57.

Descriptions of behaviour of little children suspect of autism are also significant because of the fact that their general level of activity is usually different from what may be observed in other children. At times, the children are dominated by almost total passivity. It seems totally removed, characteristic is the lack of curiosity, interest in its environment, both the physical as well as the social. Parents indicate frequently that the child, when set down at a specific point, remains there, not making attempts at moving, playing or following a caretaker who is walking away. A second, significantly different image of activity of the child may be excess hyperactivity, hypermobility, connected to the inability to focus attention on anyone or anything even for a moment. The child is constantly in motion, it runs, jumps, climbs furniture. Its activity seems chaotic, devoid of any objective and changes all the time. It is accompanied by a high level of excitement, adjusted through physical expression, but this activity at the same time serves self-stimulation. It is frequently accompanied by fits of rage and aggression, screaming in public places, reactions of fear and panic. Such a mode of behaviour of the child is frequently mistaken with the attention deficit and hyperactivity disorder (ADHD). It must be noted, however, that in a minor group of children it is possible for these two disturbances to coexist[69].

Autistic children may exhibit symptoms indicating disturbances in sensory integration. However, they do not differentiate children with ASD from children with other developmental disturbances[70]. A characteristic trait of the dysfunction of sensory integration are wrong responses to the sensory stimuli that they experience. Typical symptoms of sensory disintegration in little children with autism include, among others: hypersensitivity or hyposensitivity to the touch, to light, to sound, to motion, to taste and to smells (e. g. sen-

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[69] E. Pisula, *Małe dziecko z autyzmem…*, op. cit., p. 53.

[70] M.L. Kutscher, J. Glick, *Zaburzenia integracji sensorycznej,* [in:] L.M. Kutscher, T. Attwood, R.R. Wolff (ed.), *Dzieci z zaburzeniami łączonymi*. Published by K.E. LIBER, Warszawa 2007, pp. 168–169.

sory factors related to eating: colour, texture, taste may lead to a highly restrictive diet of the child); concentration disorders, an uncommonly low or high level of activity, frequent inactivity or withdrawal, the inability to cope with frustration, with self-satisfaction, intense, disproportionate reactions to changes to the situation or unknown places, impulsive behaviour, difficulty shifting from one activity to another[71].

In recent years, more and more information is emerging concerned with other disturbances in the motor development of children as an indicator of autism risk. Such deficits apply to major and minor motor functions, the maintenance of balance, the speed of movement, the maintenance of the body position of the child and the motor functions of the speech system. Studies of motor activity of children from the autism risk group were conducted by O. and P. Teitelbaum, and have shown that this development shows significant disturbances entailing mainly the asymmetry of body motions. Researchers believe that the recognition of indicators of such disturbances in babies aged between six and eight months is fully possible. They have shown that in children, in whom autism spectrum disorders were diagnosed, asymmetry of movements during lying and crawling, the maintenance of the asymmetric tonal neck reflex outside of the proper time of development and the lack of defensive movements when the child would be losing balance could already be observed in the first months of life. In addition, in these children, rolling from the back onto the stomach, crawling, sitting up and the gait do not develop in the correct time[72]. Motor disturbances may constitute one of the earliest signals of incorrect development of a child with autism, even before visible social or communication deficits show. It must be stressed, however, that despite long-term research in this area, it was not possible to determine a typical pattern of motor dysfunctions for autism, or the fact that not all chil-

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[71] M. Skórczyńska, *Wczesne diagnozowanie…*, op. cit., pp. 52–53.

[72] O. Teitelbaum, P. Teitelbaum, *Czy twoje dziecko ma autyzm? Jak rozpoznawać najwcześniejsze oznaki autyzmu,* Published by Harmonia Universalis, Gdańsk 2012.

dren from the autism risk group may show such divergences from the development norm[73].

Sleep and appetite disturbances, aggression and self-aggression, problems with bodily functions, high emotional lability (fits of anger, screaming, crying without tears) are signs that frequently accompany the development of autism spectrum disturbances in small children[74].

Early detection of autism spectrum disorders

The recognition of symptoms of autism before the second year of life of the child remains an exceedingly difficult task. Most clinicians indicate that the behaviour of children before the conclusion of the second year of age may not be sufficiently clear to establish a diagnosis of autism. In such a small child, symptoms encompassed by current diagnostic criteria may not always fully show. In addition, disturbances that belong to the autism spectrum are characterised by significant dynamics in development. The development of these children is very varied, no only in terms of speed, but also the frequency of emergence of the individual phases of development. This applies to cognitive abilities, deep social deficits, the ability to communicate as well as other problems accompanying the axial symptoms. In addition, some modes of behaviour differentiating autistic babies from their correctly-developing peers are probably related to mental disabilities or speech disturbances. If a child is mentally disabled, the autism symptoms may be assumed to be indicative of disability. Hence, the differentiation between autistic children with mental disabilities from children characterised by the same level of disability, but without autism, is more difficult than differentiating them from children in the intellectual norm[75].

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[73] E. Pisula, *Od badań mózgu…*, op. cit., pp. 43–45.

[74] H. Jaklewicz, *Autyzm dziecięcy…*, op. cit., p. 118; G. Jagielska, *Objawy autyzmu…*, op. cit., pp. 48–49.

[75] E. Pisula, *Autyzm u dzieci…*, op. cit., p. 53.

Until now, it was not possible to determine algorithms serving the diagnosis of ASD in babies below the first year of age that would be based on empirical proof[76]. According to the current state of knowledge, the earliest moment when autism could be recognised is the eighteenth month of life. This is indicated by analyses of records from control inspections conducted by paediatricians (differing significantly from the results of assessments of twelve-month-old children), as well as by results of research conducted in this area. In clinical practice, we have at our disposal various diagnostic tools for screenings. Most frequently, these tools are useful for application for the general population of children covered by basic health care services. They could aid the detection of ASD in very young babies, however, they do not permit the differentiation of ASD from other developmental disturbances. Additionally, not all of the available diagnostic tools permit the determination of the risk of autism in very small children below the 18th month of age[77].

The most useful tools for early ASD screenings in little children are considered to be the Checklist for Autism in Toddlers – CHAT (from the 18th month of life) developed by S. Baron-Cohen, J. Allen, Ch. Gillberg[78], and its modified version, the Modified Checklist for Autism in Toddlers – M-CHAT (from the 24th until the 30th month of life). G. Baird et al.[79], conducting for many years control studies on the usage of the CHAT for screenings of the general population have discovered its high usability (most children not to get a positive result of the CHAT did not receive an autism diagnosis later)

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[76] A. Steiner, T.R. Goldsmith, A.V. Snow, K. Chawarska, *Practitioner's Guide to Assessment*…, op. cit., p. 1185.

[77] M. Skórczyńska, *Wczesne diagnozowanie autyzmu*…, op. cit., p. 41.

[78] S. Baron-Cohen, J. Allen, Ch. Gillberg, *Can autism be detected at 18 months? The needle, the haystack, and the CHAT,* "Brithish Journal of Psychiatry" 1992, 161, pp. 839–843.

[79] G. Baird, T. Charman, S. Baron-Cohen, *A screening instrument for autism at 18 months of age: A 6- year follow – up study,* "Journal of the American Academy of Child and Adolescent Psychiatry", 2000, 39, pp. 694–702.

and its positive prognostic value (most children not to complete the CHAT was later diagnosed to be autistic). During the conducted research, however, it came to light that this is a tool that is less sensitive to the more subtle symptoms of autism, as children later diagnosed within the AS or with atypical autism were not detected at 18 months of age in CHAT tests. Wanting to improve the diagnostic sensitivity of the tool, in the year 1999 D.L. Robins, D. Fein, ML. Barton, J.A. Green[80] had introduced modifications to it, proposing a modified version – the M-CHAT, which excluded observation by a medical practitioner, and expanded the number of questions aimed at parents. At the same time, they improved their practical usability for screening tests of 24-month-old children. Another useful screening tool for children aged 24–36 months is the interactive Screening Tool for Autism in Two-Year-Olds – STAT[81]. The diagnostic criteria for this tool are closely tied with later discovery of the ASD. These are the lack of reactions to the own name or a limited frequency of these, the inability to follow an indication or gaze, an indication for reasons other than a plea and undertaking play based on imitation. This test was created on the basis of empirical proof showing that autism spectrum disorders may be diagnosed at the age of two years, because these children present specific deficits in terms of social competences spanning imitation, functional play and directing attention. Based on clinical and scientific observations, selected were activities that best differentiate the group of children with autism from the control group[82].

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[80] D.L. Robins, D. Fein, M.L. Barton, J.A. Green, *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" 2001, 31(2), pp. 131–144.

[81] W.L. Stone, E.B. Lee, L. Ashford i wsp., *Can autism be diagnosed accurately in children under 3 years?*, "Journal of Child Psychology and Psychiatry" 1999; 40(2), 219–226; W.L. Stone, E.E. Coonrod, O.Y. Ousley, *Brief report: Screening tool for autism in 2-year-olds (STAT): Development and preliminary data,* "Journal of Autism and Developmental Disorders" 2000, 30(6), pp. 607–612.

[82] A. Rynkiewicz, M. Kulik, *Wystandaryzowane, interaktywne…*, op. cit., pp. 43–44.

Due to the complex and specific mode of progress of development processes and their mutual ties in the population of children with autism spectrum disorders, it is necessary for the diagnostic process or the model of early detection of autism to be conducted in many stages. Clinical trials have shown that only systematic observation of the child, using suitable diagnostic tools (even their multiple use at the right times) provide the basis for an ultimate diagnosis[83]. This is a priority aspect of diagnosis, conditioning the early commencement of therapy, and at the same time providing a perspective to reduce the child's difficulties and preventing disturbances that could emerge as so-called secondary disturbances. We have at hand an ever higher volume of data indicating that early intervention for children with autism spectrum disorders brings positive results[84].

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[83] M. Skórczyńska, *Wczesne diagnozowanie*…, op. cit., p. 52.

[84] J. Ball, *Autyzm a wczesna interwencja. Rzeczowe pytania, życiowe odpowiedzi,* Wydawnictwo Harmonia Universalis, Gdańsk 2016.

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