Identification of the Effective Algorithms in Language-Assessment Programmes for Autistic Children

Barna Iuliana [a] *, General Science Department, Dunarea de Jos University, 800102 Galati, Romania
Agapii Eugeniu [b], The State University of Physical Education and Sport, 2024 Chisinau, Moldova

Abstract

In the case of an autistic child, the language does not occur at the usual age, and there is no gesture communication. The first form of language describes several features: the immediate or delayed echolalia (which equates to what the interlocutor has just said), the specific monotonous and staccato prozodia, the reversal of the pronouns (you or he is designated), the poor syntax and the total or partial absence of expression emotions. The novelty of this pre-experimental study for determination and observation of speech disorders consists of structuring a series of theoretical frames (concepts, principles and models) in what concerns the speech disorders specific to preschool autistic children, as well as in providing a psycho-linguistic profile and proposing programmes and games useful in early detection of communication deficiencies.

Keywords: Autistic children, evaluation, language disorders, algorithms.

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* ADDRESS FOR CORRESPONDENCE: **Barna Iuliana,** General Science Department, Dunarea de Jos University, 800102 Galati, Romania.
E-mail address: iuliana.barna@ugal.ro / Tel.: +40-751-257152

1. Introduction

Autism has recorded an alarming increase at the world level, statistics claiming that 1 child out of 68 (1 out of 61 according to other studies) is born with this disorder (autism is more frequent in the case of boys than in that of girls – a 4:1 ratio). Under the category of autistic spectrum disorders fall, according to DSM-IV-TR: the infantile autism, the Rett syndrome, the childhood disintegrative disorder, the Asperger syndrome and the pervasive developmental disorder, without other specifications (atypical autism or PDD-NOS) (American Psychiatric Association, 2003). The ICD-10 classification includes another entity, known as the overactive disorder associated with mental retardation and stereotyped movements (Rad, Costinescu & Dobrescu, 2008). The current research has not yet provided a clear delineated image of the identification of the factors that lead to the occurrence of the autistic spectrum disorder.

2. Main argument

Medical research indicates multiple causes which may lead to the activation of the autistic phenomenon: pathologic, organic, biochemical, immunologic, neurologic and inappropriate medical treatment. Today, Romania provides a national programme for the early diagnostic of autistic spectrum disorders and for the identification of the dysfunctions associated with this syndrome, accessible at the family doctors' offices. The family doctors will apply a standard screening questionnaire (elaborated within the framework of the National Programme of Mental Health: Prophylaxis in psychiatric and psychosocial pathology, and validated for the general population by Babes-Bolyai University of Cluj-Napoca), which includes questions for the parent and observations of the doctor, and evaluates the child's abilities at the level of interaction, non-verbal communication and emotional response.

Table 1. Screening and diagnosis of autism.

Questions for the parents	Yes	No	Some times
Does your child look into your eyes when you speak to him?	0	2	1
Have you ever thought that his hearing is not normal?	2	0	1
Is the child difficult when it comes to food? Does he seem to be lacking an appetite?	2	0	1
Does he reach out to be taken up in your arms?	0	2	1
Does he reject embraces?	2	0	1
Does he play peek-a-boo?	0	2	1
Does he smile to you when you smile? (Replace this question at 24 months with: Does he call you mother?)	0	2	1
Can he sit on his bed when he is awake?	2	0	1
Does he always react when he is called? Does he turn his head when he is called?	0	2	1
Family doctor's observations			
The child avoids to look directly in other people's eyes/ does not support visual contact	1	0	-
Obvious lack of interest in others	1	0	-
After the age of 24 months: motor stereotypes (hands flapping, hops, walking on his toes, rotates, inadequate posture, etc.)	1	0	-
Score 0–6 Minimum risk			
7–9 Medium risk Re-evaluation in three months			

10–18	**Severe risk**	**Referral to the specialist physician (pediatric psychiatry. pediatric neuropsychiatry)**

However, the initial testing is just a first step in the early tracing of a child suspected of autism. For the objectiveness of the diagnostic, it is necessary that the following sources of information be taken into consideration:

1. Tests and scales applied in clinical sessions.
2. Interviews and information provided by parents and teachers.
3. Observations in daily instances and/or structured observations of the relations between parents and the evaluated child.

3. Language assessment for autistic children. Means of test selection.

Specialised literature lists the following language disorders in the case of autism:

Pronunciation or utterance disorders: dyslalia and dysarthria;
Speech rhythm and fluency disorders;
Voice disorders: aphonia and dysphonia;
Read/written language disorders: dyslexia-alexia and dysgraphia-agraphia;
Polymorphic disorders: aphasia and alalia (mutism);
Language development disorders elective mutism, retardation in the general speech development
Language disorders based on psychic dysfunctions dyslogia, echolalia, etc.

The American researchers who tackle the identification of the structure of language in the case of autistic children claim that 60% of them also suffer from language disorders. By analysing each dimension of the message, speech therapists note that the autistic children often display deficiencies at the morphological and syntactic levels (they incorrectly use verbal tenses morphemes); at the semantic level (they fail in making up sentences which include multiple significance of some words); at the pragmatic level – social language is heavily affected (they cannot adapt contextually, unprogrammed; they cannot assume a role unless they are familiar with the situation); at the prosodic level (hypo- or hypernasality, defective voice control), whereas the echolalia level is often present.

The aim of the present study is to devise a programme for the identification of the problems of defective pronunciation of pre-school and school autistic children, so that it can become accessible both to experts and teachers.

Specific objectives:

- identification of language disorders in autistic children at the pre-school and school age;
- orientation of speech therapy towards, correction, recovery, adaptation and social integration;
- recommendation of exercises and games for the correction of language disorders.

3.1. Types of evaluation

Initial evaluation tests: Speech acts album, illustrated spelling book, exploratory conversations, counting and poetry reciting.

Pre-therapeutic evaluation entails establishing the level of verbal acquisitions in relation to chronological age (Galbinasu, 2011):

- pronounces sounds and words;
- understands the message and the verbal command;
- communicates through isolated words or meaningful constructions;
- uses spoken language as communication means;
- establishing the language-thinking relation;
- establishing the level of graphic and lexical acquisitions.

Tests: pronunciation by imitating sounds, syllables, words and sentences;

- association of images and words or gestures;
- indication of the images showed by the speech therapist;
- using these notions in concrete situations (as speech, action and gesture);
- narrating from images.

The intermediary/periodical/continuous assessment is pursued throughout the intervention.

3.2. Useful algorithms in spoken/written language – assessment programmes for autistic children limbaj (Curriculum for Pre-University Education, 2008)

3.2.1. Reception of the signals/stimuli from the environment and granting them appropriate significance:

- Testing the memory for geometric shapes (Pieron)
- Testing the memory for numbers
- Tests for examining the praxis (speech-language pathology)
- Primary tests for perceptive abilities

Examples of therapeutic activities

Exercises of identifying the visual stimuli;
Exercises of identifying objects and images;
Exercises games of classification, grouping and sorting (after colour, shape, size);
Exercises of recognising the olfactory and taste stimuli;
Exercises of identifying various fruits or foods (smell/taste);
Exercises of tactile recognition;
Didactic game – recognising objects by touching (moulds of fruits and geometrical shapes).

3.2.2. Developing and practising the phonemic hearing

- Tests of examining the spoken language
- Examination sheet of the child with alalia
- Tests of phonologic awareness

Examples of therapeutic activities

Exercises of uttering syllables and words;
Practising the rhythm sense (clapping, rhythmic games of motion and eurythmic structures);
Exercises of auditory differentiation;
Exercises of differentiating between voiced and voiceless sounds;
Exercises – games of phonetic analysis, by identifying the placement of phonemes in a word.

3.2.3. Developing and correcting the read/written language (dyslexic-dysgraphic disorders)

- The Borel–Maisonny tests for writing and reading
- A.B.C Test (L. Filho)
- Writing examination tests
- Evaluation sheet of graphic difficulties (E. Vrajmaj)
- Evaluation of lexical predispositions – Fayasse

Examples of therapeutic activities

a. Exercises of identification – differentiation and memorisation of letters:
   Visualisation, differentiation and name of letters;
   Showing the letters through gestures;
   Tactile identification of letters [feeling the letter cut out of thick cardboard in large sizes (10 cm)];
   Construction of the letter from modelling clay, sticks and wire with or without a model;
   Exercises of association the letter with the image of a word which starts with that letter.
b. Exercises of associating the phonemes, letters and graphemes:
   Exercises of choosing the letter from a group;
   Exercises of associating the letter with an illustrated word;
   Exercises of rendering the grapheme with the support of points and arrows;
   Global reading method;
   Writing in capital letters/typing the letter on the computer keyboard;
   Letter dictation;
   Transcription from printed letter to handwriting;
   Association of phoneme with the capital letter.
c. Exercises of composition, reading and writing of mono-disyllabic words with the letters already learnt.

3.2.4. Developing the activity of adequately communicating in various situational contexts using both verbal and non-verbal language

- the Portage scale (0–6 years)
- test of vocabulary in images
- T.A.C.L-R language test
- Wheldall test of language comprehension.

Examples of therapeutic activities

Exercises of pantomime in role-play games;
Description of people known by the child;
Exercises – games with puppets in view of constructing a dialogue;
Exercises of initiating a dialogue based on image support;
Educating empathy with the characters of a watched/listened story;
Exercises of expressing one's own opinion on facts and events that happened at school/in the family/during the holiday.
Dialogues with situational roles:
Exercises of forming simple sentences from images, slides, imagistic support of educational software, reflecting various social instances (didactic game); *Situational dialogues: going shopping, at the doctor, at the restaurant, At the ZOO, etc.*

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4. Conclusions and recommendations

Speech therapy consists of a set of educational and medical methods systematically and gradually applied to individuals diagnosed with communication disorders. In what the language correction and improvement is concerned, the literature in the field and practice show that applying generally valid methods in all cases of communication disorders may lead to delays in the rehabilitation process. In case of autistic children, and not only, speech and rehabilitation therapy is customised and organised according to a plan devised by an interdisciplinary team. The primary method in speech therapy is imitation, but it needs to be supported by a number of other procedures meant to stimulate the language and autonomy of an individual. However, the speech therapy intervention can only take place following a complex evaluation of all areas of human development.

We recommend that the speech therapy activity be predominantly games-based and that the teaching materials used be accessible, adapted to the psycho-physical potential of the autistic children.

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