

EARLY INTERVENTION STRATEGIES FOR PREVENTING AND CORRECTING BEHAVIOUR DISORDERS IN PRESCHOOLERS

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Abstract

From a theoretical perspective, this paper provides a summary of current theories and researches on behavioural disorders in children, particularly on ADHD (Attention Deficit Disorder and Hyperactivity), its etiology and forms of manifestation. It highlights the importance of early intervention strategies, especially of games, both in the prevention and correction of behavioural disorders in children. Based on these theoretical premises, an applied research was undertaken with a general purpose to develop and implement certain educational and therapeutic programs to correct behaviour disorders (ADHD) in preschoolers. Starting with basic elements of child/ student centred learning, adaptation and implementation of effective strategies in accordance with the child's psychological profile, the customised intervention plan has contributed to significant progress in all areas of psychological development (cognitive, socio-emotional, psychomotor, relational) and improving maladaptive/disruptive behaviour. This confirms the general and specific hypotheses of the research and opens new fields of investigation and educational intervention.

Key words: attention deficit, behaviour disorders, customised intervention plan, hyperactivity, impulsivity, ludotherapy

Introduction

The educational practice of the last three decades highlights the increased frequency of certain behaviours of preschoolers and students that cause difficulties in school adaptation and integration: children who talk unasked, answer without listening and without waiting for the

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complete formulation of the question, children who are always moving, children who fail to complete their work/play tasks because their attention is deficient in terms of stability and concentration, aggressive children, naughty children who show noncompliance, children with defiant, oppositional behaviour etc.

These deviant behaviours can appear either in isolation or in combination with other "externalization" or "acting-out" disorders, and "in clinical language these are included in the diagnosis of *Oppositional Defiant Disorder (ODD)*, *Attention Deficit and Hyperactivity Disorder (ADHD)*, *Conduct Disorder*" (Barkley, 2011, p. 12). Behavioural disorder is considered to be a form of psychic imbalance or partial balance which causes disturbances in the emotional-volitional sphere as a result of a pre- or postnatal brain injury, morpho-functional disorders of brain activity or morbid mental structures of a sociogenic nature (Străchinaru, 1994). The picture of these behavioural disorders includes: lying, instability, irritability, impulsivity, violence, theft, escape and vagabondage, alcoholism, drug addiction, suicide, and attempted suicide.

All these behaviours are as many challenges for the child, family, educators, clinicians, and researchers. How do we distinguish a child with ADHD from a child who is spoiled, bored, who has failed to adapt to the demands of the new basic type of activity (school education) or just wants to be taken into account? Is ADHD a disease that needs to be "treated"? Or, is ADHD in fact a sum of symptoms but not a disease (Richard Saul, cf. Iuliana Dobrescu, 2003, p. 497). With the increasing incidence of this phenomenon among children there also grew the interest of specialists, parents, educators in knowing the causes of ADHD in children, the treatment to be followed and the evolution of this disorder. The number of researches, studies, papers on this topic has increased, new methods of investigation and diagnosis have been developed, new procedures of personalized intervention have been experimented from a medical, psychological, pedagogical perspective.

Many of the basic symptoms of ADHD are present at the pre-school age (agitation, loss of interest for games and movies, negativity, switching from one activity to another without completing the work or game task, lack of focus, etc.) and are manifested both during the early school years and in middle school. They are characterized by varying levels of inattention, hyperactivity and impulsivity and cause dysfunctions in various activities and environments (home, kindergarten, school, community etc). Any delay in diagnosing and treating the child with ADHD generates many integration problems in the family, community, school environment (group isolation, peer rejection, parents' and teachers' scolding admonition for poor performance in the school activity and violation of class, school, community discipline etc.). In time, both

school and home situations will multiply the symptoms, and in the absence of corrective intervention strategies, these children will become aggressive, developing anti-social behaviours.

ADHD - Conceptual delimitations, diagnostic criteria, etiology

Parallel to the increasing interest in knowing, preventing and correcting behavioural disorders in children and adolescents, we are witnessing a multiplication of perspectives for defining specific concepts/phrases: *mental health issues; behavioural disorders; socio-emotional disorders; affective disorders; ADHD disorders, etc.*

Russell A. Barkley (2011) regards ADHD as a behaviour and impulsivity disorder, and its diagnosis requires an analysis of the symptomatology for a complete anamnesis of the patient in order to achieve thorough knowledge of both the patient and the patient's family history. Epidemiological studies consistently indicate that about 5% of children and adolescents worldwide have ADHD (Polańczyk, de Lima, Horta, Biederman & Rohde, 2007, cf. DuPaul, Reid, Anastopoulos, Lambert, Watkins & Power, 2016, p. 214). ADHD is the Anglo-Saxon term for hyperactivity/attention deficit disorder, and its equivalent in Europe is "*Troubles hyperkinétique avec déficite d'attention*", meaning THADA, a less commonly used term. Many difficulties in conceptual delimitation are generated by the different criteria and levels of generality and the theoretical reference frameworks adopted. At the same time, there have been changes in terminology and diagnosis criteria for attention deficit hyperactivity disorder since the publication of DSM II. Thus, DSM II uses the term "childhood hyperkinetic syndrome"; DSM III renames the disorder as "attention deficit disorder" with or without hyperactivity; DSM III R changes the terminology to ADHD, and DSM IV maintains this terminology (Attention Deficit Hyperactivity Disorder). Other syntagms used for a short period of time have been: *hyperactive child syndrome, perception deficit, psycho-neurological integration deficit*. There should also be mentioned that, for a long time, attention deficit was considered a *learning disability or disorder*.

Tudor Adrian Hodor-Popon and Felicia Iftene (2009, pp. 20-21) consider hyperactivity to be a common *symptom*, but its diagnosis continues to be controversial due to the two diagnostic systems: DSM-IV (ADHD) and ICD-10 (HKD). The cited authors conduct a review of the diagnostic criteria, highlighting the similarities and differences between DSM-IV and ICD-10 regarding child hyperactivity.

According to DSM IV-TR (2000) there are three behavioural patterns in children that indicate the presence of ADHD: the predominantly hyperactive-impulsive model; the predominantly inattentive model; the combined type.

a. the *predominantly hyperactive-impulsive type* is characterized by the presence of at least 6 of the 9 symptoms on the hyperactivity/impulsivity assessment scale and less than 6 inattention symptoms for a period of at least 6 months.

b. the *predominantly inattentive type* (Attention Deficit Disorder - ADD) in which at least 6 out of 9 symptoms are present on the inattention scale and less than 6 H/I symptoms for a period of at least 6 months.

c. the *combined type* - in which the two previous subtypes are manifested.

According to ICD-10 (International Classification of Diseases), hyperkinetic disorders require "the definitive presence of abnormal levels of inattention, hyperactivity and anxiety that are persistent and pervasive in time but not determined by autism or affective disorders" (Hodor-Popon & Iftene, 2009, p. 21). It is important to note that both diagnosis systems appreciate as central the following symptoms of this disorder: inattention, hyperactivity and impulsivity. At the same time, the authors conclude that the differences between the two systems (DSM IV and ICD 10) are considerable as US authors consider that at least 6 criteria from the groups of Inattention or Hyperactivity/Impulsivity are sufficient to establish the diagnosis, whereas the ICD-10 criteria mention all the symptoms, both for attention deficit and for hyperactivity-impulsivity.

Other important criteria taken into account in establishing the diagnosis are the following: the presence of symptoms of hyperactivity, inattention and impulsivity before the age of 7; the presence of symptoms causes dysfunction at home or at school; the existence of clear evidence of significant clinical, social, school, occupational impairment; symptomatology does not belong to other disorders (such as pervasive developmental disorders, affective disorders, anxiety disorders, dissociative disorders, etc.). Diagnosis of this disorder requires several procedures: clinical assessment (anamnesis, diagnostic criteria DSM IV and ICD-10, differential clinical diagnosis); diagnostic questionnaires (completed by patient/parents/teachers); systematic observation in various contexts; psychological tests, scales, interviews, etc. The evaluation by the psychiatrist, psychologist, school counsellor, teachers, parents is important because, as Vincent Monastra (2011) believes, we need to be convinced that there is no other medical problem that may cause/generate symptoms of attention deficit, hyperactivity, impulsivity. The author estimates that

about 5% of children have been diagnosed with other medical problems that cause these symptoms (allergies, hypoglycemia, psychoactive substance abuse, etc.).

Other authors appreciate that assessment for the diagnosis of ADHD in children and adolescents should include a diagnostic interview with the child's parent/parents and teacher; scales for assessing the behaviour of children and adolescents at home and at school (filled in by parents and teachers); the direct observation of school behaviour, as well as the collection of data on the difficulties encountered in academic and social activities (Anastopoulos & Shelton, 2001; Barkley, 2015; DuPaul & Stoner, 2014; Pelham, Fabiano & Massetti, 2005, cf. DuPaul, Reid, Anastopoulos, Lambert, Watkins & Power, 2016, p. 215).

ADHD is considered to be one of the most frequently diagnosed behavioural disorders in childhood (DSM 5), with a *multifactorial etiology*, with an increased incidence among some risk categories, such as: premature babies, very low birth-weight babies, children who have suffered from encephalopathies, infections of the central nervous system, brain traumatism, inhibiting mechanisms disorders, pregnancy toxicosis (alcohol, tobacco, drugs and other neurotoxic substances), hereditary factors, unfavourable psychosocial factors (precarious social conditions, disorganized families, paternal criminality, lack of parental affection, unhealthy diet, stress, pollution, excessive use of information technology from an early age, etc.).

The literature highlights many theories on the etiology of ADHD, but it is unlikely that only one etiology may be satisfactorily applied to all cases. Without insisting, we enumerate some of the theories developed on this subject: *cerebral dysfunction theory*, *anatomical lesions theory*, *genetic theory*, *biochemical theory*, *neuropsychological dysfunction theory*, *behavioural inhibition theory*, *environmental and acquired factors theory*, *adaptive disorder theory*, *overstimulating environment theory*. Since none of the etiological assumptions can explain all the cases of ADHD, it is proposed to create a synthetic etiological model with which to temporarily operate for clinical purposes.

Much used in the literature, the term *comorbidity* has not been fully accepted, many authors using syntagms such as: *interaction and effects of interaction*, *diagnostic simultaneity*, *psychopathological continuum*. Lack of control, unhappy child experiences lead to neurophysiological dysfunctions, problems in impulse modelling, learning and language difficulties, anxiety affective disorders, disruptive disorders. Behaviours specific to ADHD may appear on their own or in combination with other childhood disorders. In general, ADHD syndrome evaluation scales applied so far have been developed in accordance with the guidelines DSM IV-TR (APA, 2000). Currently, research is centred on the development and calibration of

new scales that may include changes in the DSM-5, the American Psychiatric Association, 2013 (cf. ADHD Evaluation scale-5, DuPaul, Reid, Anastopoulos, Lambert, Watkins & Power, 2016, op. cit., pp. 214-225).

The ADHD therapy – intervention strategies

The literature highlights that ADHD therapy involves a multidisciplinary approach (physician, psychologist, psychotherapist) and involvement of all important people in the child's life: parents, grandparents, teaching staff.

The intervention strategies comprise:

- a. Drug treatment, established and dosed by the psychiatrist according to the severity and typology of the symptoms;
- b. Cognitive-behavioural psychotherapies;
- c. Pedagogical / educational therapies.

The complex approach to psycho-correction aims both at diminishing inadequate behaviours, but also at increasing independence and self-esteem, re-education of learning abilities, communication skills and psychosocial relational skills, providing educational support in kindergarten/school to improve school performance. The literature (Döpfner et al., 2006; Gilbert, 1998, cf. Briceag, 2015, p. 148; Glavan, 2015; Barkley, 2011; Monastra, 2011; Dikel, 2015) emphasizes the valences of the polymorphic (medical, psychological, pedagogical) therapy centred on both the child and the kindergarten, school, family.

In the paper “*Modele complexe de intervenție în psihocorecția sindromului de hiperactivitate cu deficit de atenție la școlarul mic/ Complex Models of Intervention in the Psycho-Correction of Low-Attention Hyperactivity Syndrome at Young Students*” (2015), Aurelia Glavan proposes and experiments a complex intervention model based on the theoretical and praxeological valences of several paradigms: systemic psychological developmental paradigm; methodologies and therapeutic value of games; the theories of guided activity, planned and achieved in stages; behavioural training; the theory of systemic psychological assistance; the theory of the multimodal approach (cf. Glavan, pp. 94-116). The proposed model addresses the metabolic (drug treatment), neuropsychological (correction of attention, development of stability and concentration of attention, improvement of psychomotor activity, decrease of impulsivity etc.), behavioural (application of various behavioural correction psychotherapies), personal (conflict resolution, personal development, optimization of child-adult relationship, etc.) levels.

Most theorists and practitioners consider the involvement of the family, school counsellors and teaching staff as highly important in supporting and achieving the multiple and complex objectives of therapeutic intervention. We mention, in this context, the work of Russell A. Barkley (*Defiant Children, Third Edition: A Clinician's Manual for Assessment and Parent Training*, 2011), appreciated by the specialists as a clinical guide including pertinent procedures for behavioural management methods of children with noncompliant, defiant behaviour, oppositional behaviour, stubbornness or anti-social behaviours.

In his turn, Vincent J. Monastra (2011, p. 10) considers that ADHD is "a disease that profoundly affects a person's ability to succeed at home, at school and in social relationships. However, children with ADHD may develop improved attention, behavioural control and social skills". The author proposes a program with "10 lessons that you cannot learn from doctors" and that can be applied by parents who raise children and adolescents with ADHD (op. cit., p. 188).

Research design

Research hypothesis and objectives

General hypothesis: we assume that the implementation of personalized intervention plans leads to progress in areas of psychological and behavioural development of children with ADHD.

Specific hypotheses:

Specific hypothesis 1: There are significant behavioural differences in children's attention stability and concentration, before and after covering the intervention program.

Specific hypothesis 2: There are significant behavioural differences in the area of hyperactivity-impulsivity of children before and after covering the intervention program.

Research objectives:

1. assessing the level of initial developmental and behavioural disorders of the children included in the participants, by using specific tools;
2. elaboration of personalized intervention plans according to the results of the initial evaluation;
3. application of personalized intervention plans;
4. evaluating the effectiveness of the applied intervention strategies;
5. formulating conclusions and suggestions for future intervention.

Subjects

The research was conducted on a group of 2 preschool 5-6-year-old boys, diagnosed with ADHD. The intervention was carried out over two school semesters in three stages: initial assessment (pre-test), ameliorative interventions and intermediary evaluation, progress evaluation (post-test).

Methodology

The following methods and research techniques were used for data collection: systematic observation, case study, conversation, anamnesis, analysis of the products of the activity. The main method was the case study, applied over a two-semester period, through the systematic collection of data and direct observation. Application of this method involved the following steps: selecting the subjects to be investigated; collecting data about the subjects by applying multiple methods and techniques; performing syntheses in connection with data gathered as a diagnostic; the timing of the measures adopted.

As a tool, there was used the Early Childhood Inventory-4 (ECI-4) (2010), Category A (items for ADHD), the version for parents and educators (adapted and standardized for the Romanian population). Overall, the ECI-4 is "a screening tool for assessing behavioural, emotional and cognitive symptoms present in at least 12 child psychiatric disorders" (Gadow, Sprafkin, 2010, p. 11). It is used to observe (assess) the child in the environment to which he belongs and to develop a behavioural profile of the child. The items included in ECI-4 (1-18 for ADHD) are based on the ADHD diagnostic criteria provided in DSM-IV.

Procedure

We have used both scoring methods of ECI-4:

- calculating the score of the number of symptoms (each item is rated from 0 to 1: never-0, sometimes-0; often-1; very often-1, respectively: NO-0; YES-1;
- calculating the symptom severity score (each item is rated from 0 to 3, depending on the occurrence of the symptoms, i.e.: the disorder never occurs - 0, sometimes - 1, often - 2, very often - 3).

There were also applied curricular tests for the areas: Language and Communication, Mathematical Activity, Environmental Knowledge, Education for Society (cf. the teaching auxiliary *Evaluarea inițială în grădiniță a copilului de 5-6 ani / Initial assessment of the 5-6-year-old child, in kindergarten*, authors: Maria Mătășaru, Maria Chiriloaie, Carmen Nedelcu, Viorica Pricopoaia, Lavinia Mătășaru, Luminița Cojocaru, Editura Casei Corpului Didactic, Bacău).

The data provided by the application of the tools were corroborated with those obtained through the method of conversation (with the parents of the child, with the child, with the child's colleagues), anamnesis, analysis of the products of the child' activity (worksheets, drawings, practical works).

Results and discussions

We summarize below the centralization of the results obtained in the three evaluations by applying the ECI-4 Questionnaire, EDUCATORS, BOYS version. The results highlight the score obtained by each preschooler for each indicator/item in all three evaluations: initial, intermediate, final. The more severe indicators have a higher score, as there is a higher frequency in the occurrence of a symptom or the frequency of an ADHD type of behaviour.

Table 1. The scores for the number of symptoms in the initial, intermediary and final evaluation for A.G. (Evaluation questionnaire for children - 4. ECI-4, 2010, ADHD scale)

Indicators/Items of evaluation	Initial evaluation score	Intermediary evaluation score	Final evaluation score
Attention deficit	8 Cutoff YES	6 Cutoff YES	5 Cutoff NO
Parameters of hyperactivity and impulsivity	6 Cutoff YES	6 Cutoff YES	2 Cutoff NO

Table 2. The scores for the number of symptoms in the initial, mid-term and final evaluation for A.V. (Early Childhood Inventory - 4. ECI-4, 2010, ADHD scale)

Indicators/Items of evaluation	Initial evaluation score	Mid-term evaluation score	Final evaluation score
Attention deficit	8 Cutoff YES	8 Cutoff YES	6 Cutoff YES
Parameters of hyperactivity and impulsivity	8 Cutoff YES	6 Cutoff YES	5 Cutoff NO

Table 3. The symptom severity scores in the initial, mid-term and final evaluation for A.G.

Category A. ADHD Attention deficit	Score	Category A. ADHD Hiperactivity- impulsivity	Score	Category A. Combined ADHD	Score
Initial evaluation	25	Initial evaluation	20	Initial evaluation	45
Mid-term evaluation	21	Mid-term evaluation	17	Mid-term evaluation	38
Final evaluation	17	Final evaluation	9	Final evaluation	26

Table 4. The symptom severity scores in the initial, mid-term and final evaluation for A.V.

Category A. ADHD Attention deficit	Score	Category A. ADHD Hiperactivity- impulsivity	Score	Category A. Combined ADHD	Score
Initial evaluation	25	Initial evaluation	23	Initial evaluation	48
Mid-term evaluation	22	Mid-term evaluation	18	Mid-term evaluation	40
Final evaluation	21	Final evaluation	16	Final evaluation	37

The general hypothesis and specific hypotheses have been confirmed. Thus, the scores obtained by the participants at the end of the personalized intervention program reveal significant behavioural differences regarding the stability and concentration of attention, as well as the parameters of hyperactivity and impulsivity before and after the intervention program. Thus, if in the initial assessment, the number of attention deficit symptoms for each participant is 8, and the severity score of the attention deficit symptom is 25 ($T = 74$), indicating an increased severity, in the mid-term evaluation, the number of attention deficit symptoms for AG decreases to 6, and the symptom severity score drops to 21 ($T = 68$), indicating moderate severity. At the same indicator, A.V. recorded a symptom score of 8 and a symptom severity score of 22 in the mid-term evaluation, remaining in the increased severity category, even if the scores were lower than those obtained in the initial evaluation. A decrease in symptom score to 5 and symptom severity to 17 ($T = 62$) was recorded by A.G. in the final evaluation, compared to previous assessment scores, indicating a shift from increased severity to moderate severity. We also notice a progress in the second participant (AV), the 2 scores recorded in the final evaluation, respectively 6 (number of

symptoms) and 21 (symptom severity score, $T = 68$) indicating a shift from increased to moderate severity.

At the hyperactivity-impulsivity indicator, in the initial evaluation, AG obtained the symptom number score of 6, in the mid-term evaluation also 6, and in the final evaluation the score of 2. A progress of the child is evidenced by the symptom severity score evolution: 20 ($T = 70$) in the initial evaluation, indicating increased severity; 17 ($T = 66$), moderate severity in the mid-term evaluation, and 9 ($T = 54$), low severity in the final evaluation.

For the same indicator, in the initial evaluation, A.V. obtained the symptom number score of 8, the score of 6 in the mid-term evaluation, 5 in the final evaluation. The severity scores of the symptoms highlight the progress of the child also in terms of the hyperactivity-impulsivity parameters: from 23 ($T = 76$), increased severity (initial evaluation) to 18 ($T = 68$), moderate severity (mid-term evaluation) and 16 ($T = 64$), moderate severity (final evaluation).

Conclusions

The results of applied research confirm the effectiveness of personalized intervention programs applied to participants, which have led to advances in the areas of psychological and behavioural development of children with ADHD. Comparing the results obtained by pre-school children in the initial evaluation carried out prior to the intervention program, with the results obtained in the final evaluation after the implementation of the training program, there may be highlighted the children's progress in diminishing the severity of the symptoms, both in terms of the attention deficit and the parameters of hyperactivity-impulsivity. Progress has also been made in terms of socio-emotional, cognitive and moral-civic development.

The activities included in the implemented formative program were correlated with clear objectives (appropriate to the child's age and individual profile), with interactive, participative methods, with ludotherapy that stimulated the interest and integration of children in the kindergarten environment. The strategies were centred on support and assistance, positive reinforcement of desirable behaviours, reducing difficulties of group interrelationships, developing the ability to express positive emotions and building self-confidence. Activities of mutual empowerment, co-operation and mutual help were designed and carried out with children, activities focused on accepting differences, accomplishing tasks, integrated activities, small group learning, capitalizing on all areas of incentives and strategies that positively influence the physical, sensory, intellectual, socio-emotional, behavioural development of the child.

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