

**ABSTRACT OF THE THESES IN PH.D.  
DISSERTATION**

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**STUDY OF FACTORS IN BACKGROUND OF  
HYPERKINETIC DISORDER IN CHILDREN OF  
PRIMARY SCHOOL**



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# Study of Factors in Background of Hyperkinetic Disorder in Children of Primary School

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## **I. Aims of Dissertation, Description of Topic**

The Hyperkinetic Disorder is one of the most frequent psychic disorders, syndromes among children. In the smaller part of the cases the symptoms can be registered also in adulthood – in somewhat modified forms – nevertheless in early puberty and from puberty on the increased danger of appearance of antisocial behaviour and personality disorder, of abuse of psychoactive drugs and drug dependence, and of other psychic disorders can exist by the person in question.

Many factors together play role in the development of the symptoms appearing in the three main fields such as the disorder of attention, impulsivity, and hyperkinetic activity. Numerous pre-, peri-, and postnatal harmful factors can disturb the maturing processes of the nerve system, including the brain organization in the background of the functions, while they do not cause more serious neurological mutation. In the early period of moderate disorders appearing in the regulation of sleeping-wakefulness and in the sensou-motor function are not always already striking; by applying adequate parental and institutional (kindergarten) care many lags can be corrected up to the early school years. Without this and as a result of many other disadvantageous psychosocial factors accompanying the lags of maturing symptoms develop crucial after entering school in the first form, because at this time the child meets requirements which need high-level self-regulation (F. Földi, 1998). In his comprehensive theory Russel Barkley (1997) summarizes this as follows: the disorder of inhibition regulated by the prefrontal cortex leads to difficulties in the precise motor-construction and in complex task solving needing strength, through the insufficiency of the executive functions. Children with hyperkinetic disorder can easily drop away in the school or be forced to change school many times without identifying the problem in a precise way, without applying efficient educational processes by children with learning disorder and/or the disorder of behaviour, and without individual development if needed (Kiss, 2001; Balogh, 2006; Szücs, 2003). Identification and planning of intervention are made difficult also by the fact, that children with hyperkinetic disorder do not form a homogeneous group. In DSM-IV (1995) there is a distinction: according to it hyperkinetic activity and impulsivity are not always accompanied by the disorder of attention, that is, in one of the potential sub-groups all the three basic characteristics appear, while the other sub-group is the hyperkinetic-impulsive type, and in certain cases only attention disorder can be registered. Attention disorder usually is accompanied by the disorder of other psychic functions needed for acquiring basic culture techniques (P. Balogh, 1992). In the case of the hyperkinetic-impulsive type the important

cognitive preconditions needed for learning are given, but the appearing behavioural disorder can result in the serial negative feedback of the social environment. This can be if disadvantageous impact toward school results and all complex processes of personality development. Differentiated examination of sub-groups is necessary because bibliography refers to the fact, that by those children with hyperkinetic disorder by whom attention disorder or pathological brain activity (EEG) had been not identified before adolescence, deviant behaviour appeared to a higher extent in adolescence (Satterfield-Shell, 1984, in: Rácz, 1987). In our research we have regarded the identification of these sub-groups as a starting point.

The aim of our research has been to examine children in question in a complex way, from many points of view, in early school years (in low primary school), which is the most crucial period from the point of view of hyperkinetic disorder. Children in the first form were examined on the basis of the appearance of symptoms, of the level of development of psychic functions needed for learning, and of the crucial moments in children's development from the point of view of hyperkinetic disorder (the data of case history), with special regard to factors having impact on the development of self-control processes (to the impact of early social deprivation and experience of separation). Children with hyperkinetic disorder formed sub-groups based on the examinations in the first form; children's results in tests examining basic culture techniques were taken into consideration. Sub-groups were formed in line with the definitions of DSM-IV (1995): so in one group there were children with hyperkinetic disorder who had also attention disorder and the disorder of other examined functions beside hyperkinetic activity and impulsivity; in the other there were children by whom the disorder of other functions beside the mentioned two leader symptoms could not be registered. In the latter case symptoms disturb the environment in the first line, because the child's motions are suitable, controlled, but because of being hyper-extensive, they can be disturbing. So it can happen easily that this child would be assessed in school mostly on the basis of this disturbing behaviour, and not on the basis of his or her school achievement, although the cognitive conditions of good achievement are given in his or her case (F. Földi, 1998). It is an important interrelation that in this developmental period the teacher's assessing attitude highly determines the child's attitude towards learning, motivation, actual school results, and self-esteem. The teacher serves as a model for children in the way how they should assess their peers, so it influences the child's social position in the group. Taking all this into consideration we have surveyed how social positions and self-esteem regarding social competence of children with hyperkinetic disorder and of their sub-groups develop up to the

third form. We also examined their school results reflected in marks. The collection of data regarding these factors was carried out in the fourth form, when we examined the intensity of the symptoms again, compared with the results gained in the first form, since kinetic restlessness as the leader symptom decreases at about prepuberty by processes of spontaneous maturing; but the disorder of attention and aggression as concomitant phenomena developing secondarily remain. We have followed up how the number of children identified in the first form has changed in the other forms of primary school, and we also have given a short inspect how their (form) teacher think about children with hyperkinetic disorder in the fourth form.

### Hypotheses

1. The achievement of children with hyperkinetic disorder in tests investigating basic culture techniques falls behind the results of the normal group.
2. The sub-groups of children with hyperkinetic disorder (by whom hyperkinetic disorder is accompanied by the disorder of attention and other functions, and by whom hyperkinetic disorder is not accompanied by these symptoms) differ significantly from each other along their achievement in function tests.
3. Accumulated appearance of (both biological and environmental) factors in the background of hyperkinetic disorder can be registered by children with hyperkinetic disorder in comparison with the control-group. Children with hyperkinetic disorder and the disorder of the functions are concerned by this to a higher extent. Early social deprivation and separation as potential background factors can be connected – through their impact in the development of self-control processes - with the symptoms of hyperkinetic disorder.
4. Children identified as having hyperkinetic disorder in the first form get up to the third form into disadvantageous social positions to a higher extent, they have fewer mutual relationships, and they assess their relationships in a less realistic way than their peers in the normal group (normal here means having no hyperkinetic disorder).
5. Examining the sub-groups of children with hyperkinetic disorder, those pupils have more advantages considering social positions and social relationships, by whom hyperkinetic disorder is not accompanied by any disorder of other functions.
6. Children with hyperkinetic disorder have a lower self-esteem regarding their social competence rather than their dominant, profile shaping peers belonging into the centre.
7. School results of children with hyperkinetic disorder in the fourth form fall behind the results of the normal group.

8. Children with hyperkinetic disorder, by whom disorder of cognitive function was not registered in the first form (hyperkinetic disorder without the disorder of functions) show better school achievement up to the fourth form, rather than their other peers with hyperkinetic disorder (hyperkinetic disorder with the disorder of functions).

9. By children with hyperkinetic disorder, by whom the disorder of functions was registered in the first form, symptoms remain up to the fourth form, though symptoms decrease to a more significant extent in the other sub-group.

10. Teachers have a better opinion about children with hyperkinetic disorder by whom the symptoms decrease or come to an end up to the fourth form, rather than by whom behavioural symptoms still remain or get worse.

## **II. Introducing sample and methods of examination**

In 2002 we started our examination in 15 first forms of six primary schools in Győr, where we gained valuable data of 317 children of the first form (average age 7,6 years; 157 boys and 160 girls). With our method we identified 53 children as having hyperkinetic disorder: 38 boys and 15 girls. We divided them into sub-groups. Children with hyperkinetic disorder without the disorder of functions got into one sub-group (23 persons: 16 boys and 7 girls), the other hyperkinetic sub-group was formed by children with hyperkinetic disorder and the disorder of functions (30 persons: 22 boys and 8 girls). Next examinations were carried out two years later, when children attended the third form. At this time various organizational and technical problems arose so we were able to continue our examinations only with 245 persons (122 boys and 123 girls) in 10 classes. Among the 245 children the number of children with hyperkinetic disorder in the first form was 40 (22 children with hyperkinetic disorder and the disorder of functions, 18 children with hyperkinetic disorder without the disorder of functions). In the third form there were 32 children with hyperkinetic disorder. Among the children with hyperkinetic disorder having left their school 1 pupil belonged to the sub-group of children with hyperkinetic disorder without the disorder of functions. In the fourth form the examined 10 classes were attended by 234 children (115 boys and 119 girls). Among the 40 children of the first form identified as having hyperkinetic disorder 28 pupils were there in the examined sample (20 boys and 8 girls). In the third form further 4 children with hyperkinetic disorder left their school, all of them had hyperkinetic disorder accompanied by the disorder of functions.

As for examining the potential influence of early social deprivation and separation on the development of hyperkinetic disorder we also examined the appearance of symptoms

among pupils of primary school living in a foster home. Among 50 children (27 boys and 23 girls) there were 20 persons having the behavioural characteristics of hyperkinetic disorder with different intensity (18 boys and 12 girls).

#### Methods and means of examination

As for measuring the behavioural characteristics of hyperkinetic disorder we have used the short form of Conners-scale for teacher assessment (Kulcsár, 1993). It is very important to emphasize that by applying this means we can rely only upon the teacher's opinion in assessing hyperkinetic disorder. This information can serve as an important additive for forming a potential diagnosis, nevertheless it is a very important piece of information for us – regarding the whole study -, since this assessment determines the teacher's attitude towards the child at a high probability, while the teacher's expectations and tolerance for behavioural characteristics in question can play a role in this assessment too. Making up the diagnosis needs a complex examination executed by the specialists of many fields.

As for measuring psychic functions important for acquiring the basic culture techniques we have applied tests suitable for screening children in groups made up by Porkolábné Balogh Katalin (1987). These tests have been the following: measuring attention (Pieron-test), Edtfeldt-test, 2 sub-tests of DPT (Dyslexia Prognostic Test): detection and distinction of the letterform of the alphabet, copying geometrical shapes.

As for exploring the children's previous development (case history) we have applied the so called Child-Paper Questionnaire filled in by the parents. The base of this questionnaire is the "Personality-Paper" made by Porkolábné Balogh Katalin (1992). We added to this questionnaire items regarding the child's separational feelings experienced in the first 3 years of life, and items regarding changes in the first 6 years of life which are analogous with the separational experience.

As for examining social position we have applied the hierarchical sociometry, which is a version of the traditional sociometry of many points of view improved by Járó Katalin and Veres Sándor (1978). This has been our main method. Beyond this we have also used some analytical points of view in the traditional sociometry (the number of declared and mutual relationships). With the help of the hierarchical sociometry the influence- and role-structure of the class as formal group can be analysed in a differentiated way. This structure is strongly influenced by the aims and norms of the institution. The structure of personal relationships

can be also analysed with this method, and the socially disadvantaged can be also screened (Járó, 2001).

The children's self-esteem regarding their social competence has been measured by a questionnaire; the version *a* and *b* of the Questionnaire of Social Competence published by Kósáné Ormai Vera (1998) served for it as a base. In the examination our points of view have been the following: communicational skills, being prosocial, expressing and recognising emotions, treating conflicts and tolerance of frustration.

As for revealing the school achievement in the fourth form we have applied the method of analysing documents. From the attendance register of the class we have collected the marks in conduct, diligence, physical education which are critical from the point of view of the symptoms of hyperkinetic disorder. We have also collected the marks in literature, grammar and mathematics which are important from the point of view of acquiring the basic culture techniques.

In the fourth form we interviewed the form teachers (10 persons), using the method of semi-structured interview. The questions regarded 3 main topics: (1) what is the teachers' opinion about the children being identified by us as having hyperkinetic disorder; (2) what is their opinion about the hyperkinetic disorder as the problem in question; and finally (3) we asked them for information about the children with hyperkinetic disorder having left their school during the time of examination.

### **III. Results and Conclusions**

- According to the results of Conners-scale 16,7% of the examined children are involved in the syndrome of hyperkinetic disorder. This data is similar to the relative incidence concluded from similar examinations carried out on the sample of 3-6-year-old children in Hungary (F. Földi, 1998), still it may be highly above the number of diagnosed cases identified by using more than one method.
- By screening the psychic functions important for acquiring the basic culture techniques we identified significant backwardness in the achievement of children with hyperkinetic disorder in the field of attention, visual-motor coordination and precision-motorium in comparison with the results of the normal group (1<sup>st</sup> hypothesis). Children by whom hyperkinetic disorder is accompanied by the disorder of functions are concerned to a higher extent by these background factors.
- The group of children with hyperkinetic disorder has been proved being not homogeneous from the point of view of attention and of other examined psychic functions what is in

harmony with DSM-IV. Among them we have identified children in a somewhat larger number (30 among 53 persons) who had the disorder of attention and of other examined functions beyond hyperkinetic activity and impulsivity. By them the question of screening before entering school first (included in the examination of readiness for school) emerges because in these children's case we experienced a backwardness of such a great extent at the end of the school year when screened in group that made for them to meet requirements more difficult, on the other hand it would have made special improvement necessary. In the other sub-group we have registered an acceptable achievement near the criteria in the function tests beyond hyperkinetic activity and impulsivity. In their case the cognitive conditions of learning in school are given, but they would require more special attention, patience and special dealing on account of their activity and impulsivity being excessive in the teachers' perception. The difference between the two sub-groups' achievement has been significant in all the tests (2<sup>nd</sup> hypothesis). The number of pupils in the class can be regarded as determinant when teachers assessed the symptoms because according our results in the case of a class of higher number of pupils (above 25 persons) more children were labelled as having hyperkinetic disorder.

- Data of the case history reinforced the co-existence and accumulation of factors of biological characteristics referring to the immature nerve system and environmental factors in the developmental history of children with hyperkinetic disorder. The role of social deprivation, separation and the related changes which are stressed has been supported by our examinations among children living in a foster home. These data may draw our attention to the importance of early attachment in the organization of self-control functions (3<sup>rd</sup> hypothesis).
- In the third form we examined the social positions of children who had been identified as having hyperkinetic disorder in the first form; we applied the method of hierarchical sociometry. Results show that children with hyperkinetic disorder got into a disadvantageous social position at a higher rate and had fewer mutual relationships in comparison to the normal group. In assessing the relationships in a real way we did not identify any significant difference between the two groups (4<sup>th</sup> hypothesis).
- Regarding the sub-groups of children with hyperkinetic disorder according to the data it seems that those who have hyperkinetic disorder without the disorder of other functions are in a more advantageous position (5<sup>th</sup> hypothesis). This picture was tinged by subsequent surveys carried out in the fourth form in connection with the symptoms remaining.

- In the field of the social skills in question the children with hyperkinetic disorder had a lower level of self-esteem in comparison to their dominant, profile shaping peers belonging to the centre (6<sup>th</sup> hypothesis). The only exception was formed by the prosocial behaviour, in which there has not been significant difference between the two groups, reinforcing the phenomenon that helpfulness is an important positive trait of children with hyperkinetic disorder; this feature could be made the best of in the co-operation with them and in their effective treatment.
- One of the most important differences between the sub-groups of children with hyperkinetic disorder has been found in the modification of their number. The half of the children by whom hyperkinetic disorder accompanied with the disorder of the functions had been registered in the first form could not be found in the same school in the fourth form. In the other sub-group there was only one child who had left that school during the four years. We got information about 5 children among the 12 having left school from the form-teachers. In the case of four children it could be outlined at a high probability that the disorder of the functions identified by us had played a role in changing school in the meantime. In one case we know for sure that the child got help in a special class. Consequently children by whom the psychological screening had shown a suitable achievement at the time of schooling could meet the requirements of the school at a certain level; we examined this phenomenon more precisely too.
- In the fourth form we collected information about the children's school achievement reflected in marks. The achievement of children with hyperkinetic disorder fell behind other children's results in all areas.
- On the other hand we have not found significant difference between the school achievements of the sub-groups of children with hyperkinetic disorder (8<sup>th</sup> hypothesis). It means that children with hyperkinetic disorder who achieved well in tests measuring psychic base-functions needed for learning in the first form manage to stay in the classes in question, do not show any advantage in the achievement in the cognitive field up to fourth form.
- In the fourth form we repeated the measurement of the symptoms of hyperkinetic disorder with the means applied previously and we analysed results on the basis of sub-groups formed previously as well. The majority of those who had hyperkinetic disorder accompanied by the disorder of the functions in the first form and if they could be still found in the fourth form in the classes examined by us had the symptoms in the fourth

form too to the same extent on average as at the time of the first examination (9<sup>th</sup> hypothesis). By the half of the other sub-group the behavioural characteristics of hyperkinetic disorder decreased to a significant extent or disappeared according to the teacher. These children probably could have had temporary or secondary disorder. In the case of the others' majority (7 among 9 persons) symptoms got more serious. All of these children were boys, with a single exception they were in a disadvantageous social position, and their school results fell behind the level we had expected on the grounds of their cognitive skills. The interviews with the teachers revealed that about those by whom symptoms had got more serious teachers had rather more negative opinions; they were assessed being aggressive, hot-tempered, restless, difficult to treat, and difficult to love (10<sup>th</sup> hypothesis). On the ground of it we have got a picture about a group of children who are frustrated on the field of parent-child relationships, peer relationships, and school results too. Their situation is also made more difficult mostly by their disorganized family background. The increasing aggression which can be kept alive by frustration having been mentioned may increase the danger of their criminalisation.

As a summary we can conclude that it would be important to identify the two sub-groups of children with hyperkinetic disorder (at least at the time of schooling), because they would need partly different help. Those who have disorder of many functions would need intensive development in nursery school and in the developing-preparing school class. By the sub-group of children without the disorder of the functions the optimal conditions of development could be assured in all primary school classes. All this could be carried out in a class of fewer pupils (maximum of 15 persons), if teachers could get more information about the given children's strength, interests, if teachers would have more patience, if they could help children develop their self-control functions, if teachers would have more knowledge about how to deal with children with hyperkinetic disorder in an efficient way. To reach this the co-operation of different specialists (teachers, developmental teachers, psychologists, and social educators) would be of help too. Because of the decreasing number of children (which is unfortunate) infrastructural and personal conditions of lower group-number would be given; the only task would be that motivated teachers would need re-training for special development. The idea that the fewer and fewer pupils would be taught by fewer and fewer teachers is gaining more ground. Consequently the group-number would be higher (25-30 persons) which would not allow a lot of children to establish abilities important for lifelong studying. The whole of the study may serve as a general survey or as a starting point for the

real establishment of non-spontaneous integration and inclusion of the examined children. We could emphasize beyond material conditions the importance of view shaping among specialists getting in to contact with the children.

1. Balogh László, 2006: Pedagógiai pszichológia az iskolai gyakorlatban. Urbis Könyvkiadó, Budapest.
2. Barkley, R. A., 1997: Behavioral inhibition, sustained attention, and executive functions: constructing a unifying theory of ADHD. *Psychological Bulletin*, 121. pp. 65-94.
3. *DSM-IV diagnosztikai kritériumai*, 1995. Animula Kiadó, Budapest.
4. F. Földi Rita, 1998: *Hiperaktivitás és tanulási zavarok*. Volán Humán Oktatási és Szolgáltató Rt., Budapest.
5. Járó Katalin, 2001: Közösségek tükörben. In: *Tanári Létkérdések. Kézikönyv gyakorló pedagógusoknak, osztályfőnököknek*. 35. kiegészítő kötet. Raabe Kiadó, Budapest.
6. Kiss Erzsébet, 2001: A hiperaktív gyerek és a pedagógus. A pedagógiai eljárások hatékonysága. *Fejlesztő Pedagógia*, 6. pp. 53-68.
7. Kósáné Ormai Vera, 1989: *Beilleszkedési nehézségek és az iskola*. Tankönyvkiadó, Budapest.
8. Kulcsár Zsuzsanna, 1993: Gyermekkori hiperaktivitás I-II. *Magyar Pszichológiai Szemle*, 3-4. pp. 270-314.
9. Porkolábné Balogh Katalin, 1998: *Módszerek a tanulási zavarok csoportos szűrésére és korrekciójára*. Iskolapszichológiai módszertani füzetek 17. sz. ELTE, Budapest.
10. Porkolábné Balogh Katalin, 1992: *Kudarccal az iskolában*. Aley – typo, Budapest.
11. Satterfield, J. H., Shell, A. M., 1984: Childhood brain function differences in delinquent and non-delinquent HY boys. *EEG Journal*, 57. 199-207. In: Rác József, 1987: A gyermekkori „figyelemzavar szindróma” klinikai pszichofiziológiája és patopszichológiája. *Psychiatria Hungarica*, 3. pp. 173-185.
12. Szücs Marianna, 2003: *Esély vagy sorscsapás? A hiperaktív, figyelemzavarral küzdő gyerekek helyzete Magyarországon*. Nemzeti Tankönyvkiadó, Budapest.

#### **IV. Publications**

1. Benyák Anikó, 2006: Alsó tagozatos hiperaktív gyermekek szociális pozíciója az osztályban In: *Alkalmazott Pszichológia VIII. évf. 2006/4.* pp. 5-21.
2. Benyák Anikó, 2005: A hiperaktivitás háttértényezőinek vizsgálata, különös tekintettel a korai szociális deprivációs élményekre In: *Alkalmazott Pszichológia VII. évf. 2005/4.* pp. 124-140.
3. Benyák Anikó, 2004: Hiperaktivitás és tanulási zavarok vizsgálata győri kisiskolások körében In: Raicsné Horváth Anikó Besir Anna (eds.), 2004: *ÓTE TŰKÖRKÉP 2003-2004 Óvó- és Tanítóképzők Egyesülete, Baja* pp. 175-185.

#### **Lectures at Conferences in Hungarian Language:**

1. Identification of Pupils of Primary School Who Are Considered as Having Hyperkinetic Disorder without the Sign of the Disorder of the Functions, Plan of an Examination of their Relationships with Teachers. Apáczai Napok (Apáczai-Days) international scientific conference (Section of Social Education). NYME-ATFK, Győr, 19. October 2001.

2. Hyperkinetic Disorder – Learning Disorder – Mental Health. Apáczai Napok (Apáczai-Days) international scientific conference (Section of Social Education). NYME-ATFK, Győr, 20. October 2001.
3. Examination of Hyperkinetic Disorder and Learning Disorder among Pupils of Primary School in Győr. Conference titled Tanítás – tanulás – tudás (Teaching – Studying – Knowledge) Kölcsey Ferenc Teacher Training College, Debrecen, 13. February 2003.
4. “Equality of Chance at the Beginning of Lifelong Studying” – Examinations of Background Factors of Hyperkinetic Disorder and Learning Disorder among Pupils of Primary School in Győr. Apáczai Napok (Apáczai-Days) international scientific conference (Section “Equality of Chance Given by the European Union among children and youth with special need). NYME-ATFK, Győr, 17. October 2003.
5. Examination of Pupils of Primary School Who Can be Considered as Having Hyperkinetic Disorder of Many Points of View. Magyar Pszichológiai Társaság XIV. Nagygyűlése (The 14<sup>th</sup> Assembly of the Hungarian Psychological Association) (Section of Educational and School-Psychology), Debrecen, 29. May 2004.
6. Hyperkinetic Disorder and Social Position Apáczai Napok (Apáczai-Days) international scientific conference. NYME-ATFK, Győr, 21. October 2004.
7. Social Position of Pupils of Primary School in the School-Class Who Can be Considered as Having Hyperkinetic Disorder, Conference titled “Találkozások” – lehetőségek és utak a gyermekek boldogulásához (“Meetings” – Chances and Alternatives for Children Succeeding (Section “Possibilities in Integration) Szolnok Városi Pedagógia Szakszolgálat (Town Educational Office in Szolnok), Szolnok, 18. November 2004.
8. Examination of Pupils of Primary School Who Can be Considered as Having Hyperkinetic Disorder from the First Form to the Fourth Form. Országos Neveléstudományi Konferencia (National Educational Conference) (Section of Special Education) MTA Pedagógiai Bizottsága (Educational Committee of Hungarian Scientific Academy), Budapest, 6. October 2005.
9. Hyperkinetic Disorder and School Results Apáczai Napok 2005 (Apáczai-Days 2005) international scientific conference NYME-AFK, Győr, 21. October 2005.
10. Survey of School Results of Children Identified as Having Hyperkinetic Disorder. Kiss Árpád Emlékkonferencia (Memorial Conference for Kiss Árpád) (Section of Achievement, Attitudes). Debrecen, 4. November 2005.
11. Children of Low Primary School with Hyperkinetic Disorder. Befogadó társadalom, befogadó nevelés konferencia az inkluzív nevelésről (Integrating Society, Integrating Education – Conference about Inclusive Education) (Section: Integrating Education in Every Day Life), Kecskemét, 24. March 2006.
12. Survey of School Results of Children Identified as Having Hyperkinetic Disorder. IV. Pedagógiai Értékelési Konferencia (4<sup>th</sup> Conference of Educational Assessment) (Section: Equality of Chance in Education), Szeged, 20. April 2006.
13. Examining School Results of Children of Primary School in the Fourth Form Who were Identified in the First Form as Having Hyperkinetic Disorder. Magyar Pszichológiai Társaság XVII. Országos Tudományos Nagygyűlése (17<sup>th</sup> National Scientific Assembly of the Hungarian Psychological Association) (Section: Nursery School and School Psychology – Studies –in memoriam of Porkolábné Balogh Katalin), Budapest, 25. May 2006.