

**This is an electronic reprint of the original article.  
This reprint *may differ* from the original in pagination and typographic detail.**

**Author(s):** Honkasilta, Juho; Sandberg, E.; Närhi, Vesa; Jahnukainen, Markku

**Title:** ADHD in the context of Finnish basic education

**Year:** 2014

**Version:**

**Please cite the original version:**

Honkasilta, J., Sandberg, E., Närhi, V., & Jahnukainen, M. (2014). ADHD in the context of Finnish basic education. *Emotional and Behavioural Difficulties*, 19(3), 311-323.  
<https://doi.org/10.1080/13632752.2014.883789>

All material supplied via JYX is protected by copyright and other intellectual property rights, and duplication or sale of all or part of any of the repository collections is not permitted, except that material may be duplicated by you for your research use or educational purposes in electronic or print form. You must obtain permission for any other use. Electronic or print copies may not be offered, whether for sale or otherwise to anyone who is not an authorised user.

ADHD in the context of Finnish basic education

<sup>a</sup>Honkasilta, J., <sup>b</sup>Sandberg, E., <sup>c</sup>Närhi, V. & <sup>b</sup>Jahnukainen, M.

<sup>a</sup>Department of Education, Special Education, University of Jyväskylä, Finland; <sup>b</sup>Department of Teacher Education, Special Education, University of Helsinki, Finland; <sup>c</sup>NMI-Foundation, Finland

Correspondence address:

Dr Markku Jahnukainen

Department of Teacher Education, Special Education

P.O. Box 9, FI-00014 University of Helsinki, Finland

Email: markku.jahnukainen@helsinki.fi

## ADHD in the context of Finnish basic education

### Abstract

Students with Attention Deficit/Hyperactivity Disorder (ADHD) are a growing group served under special education services in many Western societies. This article describes the history and current state of the services, as well as the assessment procedure. Our conclusion is that the status of students with ADHD in Finnish basic education (Grades 1 to 9) is still unclear. Based on the comparison of the prevalence and the population served in special education we can assume that this group is probably underserved in the Finnish school system. We also present findings from two recent studies among families with ADHD children in Finland. Family viewpoint can contribute to our knowledge and understanding about the diversity of the symptoms' manifestation as well as the extent and completeness of the possible outcomes of the disorder. In the context of schooling, studying these families' viewpoints can be of additional use in evaluating the present state of school practices in relation to institutional enactments established in educational acts. Future challenges about meeting the variety of pupils' needs according to inclusive pedagogy are discussed.

*Keywords:* Attention Deficit/Hyperactivity Disorder; Emotional and Behavioural Difficulties; Special Education; Tier 3; School; Parents; Family

## ADHD in the context of Finnish basic education

Attention deficit disorder has gained a lot of attention in most Western school systems during the last fifteen years. The number of students with this diagnosis has increased rapidly and different kinds of interventions have been developed in special education as well as related fields (e.g. Webster-Stratton, Reid, & Beauchaine 2011). Historically, these kinds of students would often have been labelled as maladjusted and behaviourally disturbed. Currently, many school systems are categorizing children with ADHD under medical and physical definition, e.g. in the United States many of these children are served under the umbrella category of OHI (Other Health Impairment) (e.g. Schooes, Reid, Wagner, & Marper 2006), and in Canada (Alberta) under (Severe) Physical or Medical Disability (Wishart & Jahnukainen 2010). In the Finnish school system, the special needs of students with ADHD are most often defined under a category such as “varying degrees of cerebral dysfunction, physical disability or similar” (Jahnukainen 2010). This category also entails other neurological and developmental disorders such as the CP syndrome.

### **Finnish special education system: an overview**

The special education system in Finland has undergone a major reform during the last couple of years since the enactment of the *Amendment of the Basic Education Act* (642/2010). The core of the reform is based on the launch of a three-tiered intervention model defined as *Learning and Schooling Support*. The *first* tier referred to as *general support* consists of every action made by the regular classroom teacher in terms of differentiation as well as in terms of school-wide efforts to meet the diversity of students. This is basically transferring more responsibility to classroom teachers as well as the school community. The *second* tier consists of remedial support by the class teacher, co-teaching with the special educator and temporal individual or small-group studying with the special educator. The *third* tier consists of the whole continuum of special education services from fulltime general education to a special

school placement and is mostly equivalent to the traditional special education for students with diagnosed disabilities available in other school systems (see Jahnukainen 2013).

When comparing the Finnish special education services with other school systems, the unique feature is the broad use of the Tier 2 level services (e.g. Graham & Jahnukainen 2011; Itkonen & Jahnukainen 2010), which were defined earlier as ‘part-time special education’ (Jahnukainen 2011; Kivirauma & Ruoho 2007). In fact, this service option has been the key for the low threshold policy typical of Finnish special education since the 1970s. Moreover, the bulk of the special needs support has been delivered using this option without officially transferring students to special education (Jahnukainen 2011). This service option is preventive by nature and focuses on mild learning and behavioural difficulties (Itkonen & Jahnukainen 2010). During the school year 2010–2011 about 120,000 (or 21.7 per cent) of the comprehensive school students (age group 6 to 16) were taking part in this service. In addition, 8.1 per cent (44,000 students) were served using the Tier 3 level ‘fulltime’ special education option (Statistics Finland 2012). The students with diagnosed ADHD or ADHD-like symptoms can be served at any of the tiers depending on the individual needs; however, the ADHD is explicitly recognized at the Tier 3 level only among other conditions defined as “varying degrees of cerebral dysfunction, physical disability or similar”.

### **History and prevalence of ADHD in Finland**

#### **Definitions and diagnosing**

In Finland, as in Europe in general, the WHO’s ICD-10 is officially clinically used for diagnosing Attention Deficit Hyperactivity Disorder (ADHD) characterized by symptoms of inattention, overactivity and impulsivity (STAKES 1995). Although ADHD is not divided into three subtypes in ICD-10, as it is in DSM-IV, the subtypes may be used in Finland for diagnoses as stated in *ADHD: Current Care Guideline* (2012).

The definition and the concept of the diagnostic term “ADHD” has been controversial throughout its trajectory, as the conceptualization of the symptoms, aetiology as well as the diagnostic criterion have changed over the years. Also, in respect of this, a variety of different names for the phenomenon has been applied, notably in the Nordic countries the concepts of MBD, DAMP (seldom in Finland), ADD and ADHD have varied in aiming to explain children’s features of attention deficit, motor restlessness as well as learning disabilities and developmental coordination disorders (Michelsson 2001; Gillberg & Rasmussen 2001). Yet, during the medicalization process of the concept of ADHD, there is a connecting thread that has remained the same: the aim to understand and explain children’s unfavourable behaviour in their social surroundings through medical criterion.

Children’s symptoms of motor impulsivity, excitability, aggressiveness and uncontrolled emotionality was thought, according to Connors and Kinsbourne (1990), to have emerged in the 1920s by brain damage due to a pandemic of *encephalitis lethargica*. Consequently, the concept of “minimal brain damage syndrome” evolved and remained for decades characterized by features, such as restlessness, impulsivity, emotional lability along with a variety of intellectual and perceptual motor disturbances (Michelsson, 2001). The brain damage hypothesis faced criticism in the 1960s mainly due to the lack of direct evidence for brain damage in children with the syndrome. Thus the name and the definition of the syndrome was altered by Clements (1966) to that of “minimal brain dysfunction” (MBD). Its definition emphasized both behavioural and neurocognitive impairments: behavioural and learning disturbances as well as combinations of deficiencies in perception, conceptualization, language, memory, inattention, impulse and motor control were incorporated into its symptoms. At the same time, in 1968, APA published the second edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-II) and referred to a similar symptomology using the concept of “hyperkinetic reaction of childhood” characterized by overactivity, distractibility and short

attention span (APA, 1968). However, in the Nordic countries the concept of MBD gained ground and proposals for carrying out its clinical diagnosis were put forward (Hagberg 1975; Gillberg 1981). Attention and learning disabilities were seen as a primary consequence of brain dysfunction caused by disturbances of the central nervous system (CNS), a development that led to the emergence of screening methods for early detection of neurodevelopmental disabilities (Bax & Whitmore 1973, 1987).

In Finland, MBD began to be acknowledged during the 1970s along with the work of Michelsson and her colleagues (1981, 1987), who developed a comprehensive screening examination for child health centres to use for 5-year-old children. Also, resting upon the indications of research (Lindahl, Michelsson, & Donner 1988; Michelsson, Seppälä, & Näreneva 1987), an information campaign for acknowledging MBD was started in Finland in the 1970s, resulting for example in constructing day-care centres for children with MBD and special needs (see Michelsson 2001) as well as recommendations of supporting children with MBD at school (Valkama 1991). Finally, the diagnosis was strengthened along with the 9<sup>th</sup> edition of ICD, which was in official clinical use in Finland and in which the MBD diagnosis was presented (Lääkintöhallitus 1987).

The concept of MBD concerned children with symptoms of inattention and hyperactivity and coexisting conditions including learning disabilities and problems of either motor coordination or perception, or any combination of the three (Michelsson 2001). The aim of the concept of MBD was to pull together children's unfavourable symptoms, particularly at school, under one diagnostic category. However, the problem was that the concept was based on phenotypic grounds, whereas it implied brain dysfunction with no evident CNS involvement (Rutter 1982). Therefore the term fell into disfavour (see Ingram 1973; Schmitt 1975; Taylor 1983) and diagnosing children with the above-mentioned symptoms shifted once again; the concept of "attention deficit disorder" (ADD) was introduced (APA, 1980) as the

neurological view was abandoned in favour of purely observed behavioural features as briefed in the DSM-III. Later on hyperactivity was considered a dominant symptom of the disorder and the first concept of “attention deficit hyperactivity disorder” (ADHD) was created (APA 1987: DSM-III-R). The DSM-III-R did not differentiate children based on either hyperactivity/impulsivity or inattention, and therefore the current concept of ADHD with three different subtypes (predominantly inattentive, predominantly hyperactive-impulsive and a combined type) was introduced in the DSM-IV (APA 1994). Along with the change of the terminology, learning and motor problems were also defined as separate diagnoses and as comorbidities of ADHD rather than as its direct symptoms. Also, the shift from MBD to ADHD meant a diagnostic shift from neurological problems to ones within a psychiatric entity, at the same time the conceptualization of the diagnosis became descriptive in order to avoid unproved etiological assumptions. In Finland MBD was an officially used diagnosis until the introduction of ICD-10 in 1995, in which MBD had been replaced by “hyperkinetic disorder” as a general name for ADHD (STAKES 1995). Yet the use of the term MBD has diminished only gradually, for instance the Finnish MBD association (founded in 1989) was replaced by a Finnish ADHD association not earlier than in 2003.

### **Prevalence**

No official statistics have been published on the number or proportion of students diagnosed with ADHD in Finland. Similarly, as noted earlier, ADHD has not been defined as a separate category of disability in Finnish special education statistics. Therefore it is impossible to present numbers on children diagnosed with ADHD in Finnish schools. However, Smalley, McGough, Moilanen and others (2007) estimate that the prevalence of ADHD (according to the criterion of DSM-IV) among adolescents of Northern Finland (birth cohort 1986) is 8.5 % with a male/female ratio of 5.7:1. The estimated prevalence of the research is consistent with rates of ADHD in other studies of adolescent (Hudziak, Heath, Madden et al.

1998; DuPaul, Anastasopoulos, Power et al. 1998; Rohde, Biederman, Busnello et al. 1999) and with the worldwide metaregression analysis with prevalence of 5.3 % by Polanczyk, de Lima, Horta, Biederman and Rohde (2007). In general, the prevalence of dysfunction is estimated to be 65% in the age of 25 (when diagnosed earlier) even if only 15% still meets the strictest criterion of diagnosing (Faraone, Biederman, & Mick 2006).

### **ADHD and medication in Finland**

Compared to other western countries medication for ADHD has been scarcely used in Finland. One clear explanation for this is that diagnosis of ADHD is strictly required for the prescription of medication. Further, there is a clear difference in the involvement of the medical doctors in following the child development during the early years in Finland compared to many countries based on a family physician practice (Jahnukainen 2010): most mild to moderate developmental difficulties related to children's learning and behaviour are monitored at the Maternity and Child Health Clinics by the designated nurses specialized in family health guidance. These clinics also offer psychological and social services and medical doctors are involved mostly with issues of a distinctly medical nature. In any case, the medication is not started without consulting a specialized paediatrician, neurologist or psychiatrist.

Zoëga, Furu, Halldórsson and others (2011) present the statistics on the use of medication for ADHD in the Nordic countries. In 2007, of 7- to 15-year-old Finnish children 0,6% had been prescribed medication for ADHD. This proportion was considerably lower than in the other Nordic countries. More recent statistics have not been published, but it is likely that the use of medication has increased since then. The first Finnish Current Care Summary on ADHD was published in 2007 (Moilanen, Närhi, Olsén et al. 2007), and it is likely that it increased the awareness on medication for ADHD, and consequently, the use of medication. The Attention-deficit/hyperactivity disorder, children and adolescents; Current Care Summary (ADHD-CCS) (2012) states that medication is as an important part of the treatment entirety,

and it recommends that the possibility for a medication trial should be offered for a child or adolescent with ADHD symptoms, if the symptoms cause handicap at school.

### **ADHD and schooling**

#### **Recommendations and principles**

Both *Amendment of the Basic Education Act (ABEA)* (2010) and *ADHD-CCS* (2012) agree on the support for children with symptoms of ADHD at school. The ADHD-CCS recommends that the school support should be implemented when the ADHD symptoms cause problems in the child's schoolwork, and that diagnosis of ADHD is not needed for school support to take place. The ADHD-CCS also provides the guidelines for effective school interventions for children with symptoms of ADHD. This recommendation is in line with the principle of ABEA, in that school support should be provided on a needs basis.

These documents that guide the school support for children with symptoms of ADHD both agree on an important principle of support on a needs basis, and thus provide a good basis for supporting these children at school. However, no studies on the actual application of school interventions for children with ADHD symptoms have been published, and it is likely that there is considerable variability in the support offered between schools. One reason for variability is likely to be that the training for school interventions is not included in teacher education on a standard basis, but is provided as in-service training for those interested. Also, as "part-time special education" is largely used in Finnish schools, it also seems likely that special education (SE) teachers in separate settings largely provide school support, and the evidence-based classroom interventions are not utilized to their potential.

#### **Special education provision**

Unlike many other countries (e.g. Australia, Canada and the USA), eligibility for SE in Finland is not based directly on diagnosed disabilities, but instead on observed special needs that are construed as difficulties in learning ('difficulty model') rather than disabilities ('disa-

bility model') (Itkonen & Jahnukainen 2010). The special education decisions will be made at the school level in a multi-disciplinary team referred to as the Student Welfare Group (e.g. Sabel, Saxenian, Miettinen, Kristensen, & Hautamäki 2011). Parents and the pupil him-/herself – if possible – also play an integral part in the decision-making process of the Student Welfare Group by considering the education options for the child. It is noteworthy to mention that even though the consultation with the school psychologists and physicians is a recommended part of the process, the final decision will always be made by the educational authorities. In a recent national survey (Pulkkinen & Jahnukainen 2010), the school superintendents were asked about the most important factors related to the special education placement decisions. Altogether 97 per cent of the respondents stated that the most important factor affecting the decision is the opinion of a consulting special educator following the evaluation of the actual needs of the child (95 %).

In practice, this policy means that a student with a diagnosed disability will receive SE only if there is an *observed educational* need, but at the same time, somebody without a diagnosed disability may be eligible for special support if that need is recognized as an educational need. As already mentioned, ADHD is not defined as a separate category in the Finnish SE system, however, it has been amalgamated under the category “Varying degrees of cerebral dysfunction, physical disability or similar” (VDC). Because this category is in use only at the most demanding level of Tier 3 (special support), it reflects only upon those students considered as having the most challenging needs related to schooling.

The SE placements in this category have been gradually increasing during the last two decades from 0.2 percentage of the age group in 1987 to 1.2 in 2007 (Jahnukainen 2010). When compared to a more recent time period, the number of students under this umbrella category has more than doubled from 3,505 students in 2002 to 7,344 in 2010, which was 1.35 per cent of the age group. When compared with a more traditional SE category labelled ‘Emotional

and behavioural disorders', (EBD) we can see that even though there has been some fluctuation in the use of that category too, there has been only modest growth during the last twenty-five years (Table 1). However, the highly interesting fact is that nowadays in Finnish schools we actually do have more students getting special educational support based on the grounds of neurologically conceptualized deficits than based on a more traditional label of 'emotional and behavioural difficulties'. Although the general trend of students served in SE has also been rapidly growing in Finland, as elsewhere as well (e.g. Graham & Jahnukainen 2011; Richardson & Powell 2011), it is clear that the rapid development of the studies of learning and developmental disabilities has created a new kind of basis for the shift towards using more specific labels instead of more traditional, descriptive categories.

Insert table 1 here

### **Families living with ADHD in Finland**

The following section is based on two sub-studies related to the situation of families living with ADHD in Finland. The first study focused on the schooling of children with ADHD experienced by the parents. A second study concentrated on the situation of parents with ADHD themselves, who also have children with a similar diagnosis, and the situation of siblings of an ADHD diagnosed child.

#### **Study 1: Parents with ADHD children talk about their children's schooling**

"If you're not extremely strong as an adult and stand up for your child and try to educate teachers to see this, for example this ADHD, that adolescent will be completely alone and in trouble and his self-esteem will be destroyed." (The mother of a 14-year-old boy diagnosed with ADHD-I)

Honkasilta (2011) carried out an interview study of parents of children with ADHD diagnosis in Central Finland concerning their experiences of how their children had been received at primary and lower secondary schools by the personnel and of home–school co-operation. The study concerned 12 families with 14 ADHD diagnosed children (12 boys, 2 girls) from ages 9–23 and it was implemented before the enactment of the Amendment of the Basic Education Act (642/2010) was pressed nation-wide. Parents’ accounts of both their children’s school well-being as well as home–school co-operation (which seemed to be entwined) were dominantly negative as more positive accounts about the experiences were reported concerning two of the children.

Parents highlighted the need for teachers to obtain more knowledge and understanding about ADHD symptoms and their manifestation in the classroom. Parents expressed that some teachers’ ignorance of ADHD led to their children’s being stigmatized as mischievous or lazy by the teachers and thus resulted in the negligence of any adequate support according to the child’s needs in the classroom. Rather than being worried about their child’s learning, parents emphasized their worry about the possible unfavourable development of their child’s self-image due to the above-mentioned stigmatization and lack of adequate support as well as exclusive educational practices concerning teachers’ dealing with symptoms of ADHD. For instance, one mother of a 9th grader put her experiences about exclusive practices into words as follows:

“...at some point I calculated that Markus had spent thirteen hours a week with a special education teacher, which has also resulted in Markus not being considered as a member of his class. He is not considered as belonging to the class (by peers). I have mentioned this to the teachers, but they don’t consider that as being anything of im-

portance...[B]ecause after the diagnosis of ADD, Markus was automatically thrown into special education. According to my understanding, let's say according to the legislation, a student has certain rights and, according to my knowledge, special education is the very last option; I mean that teachers should have a kind of obligation to try different means to adapt their teaching but, no, the first thing that opened up was the door to special education.”

The mother constructs a negative image about the school's exclusive practices at one level and about the teachers' expertise at another level and cements her argumentation around her son's unmet rights as a student and the teachers' unfulfilled responsibilities as educators. According to the mother, the school's decision concerning her son's special education provision had not followed [in accordance with] legislation, as her son was “automatically thrown” into SE after the diagnosis with no other attempts for adapted teaching procedures. Additionally, the son is represented as a victim of the school's exclusive practices as the mother refers to her calculation of the number of hours her son had spent apart from his peer group at school. The negative image of the teachers is constructed through both their disagreement about the mother's worry about her son's being excluded from his peers and by referring to their lack of requisite know-how to differentiate their teaching.

Finally, parents emphasized the importance of home–school co-operation as a possibility to enhance the well-being of the child at school. Except for one mother, parents expressed their having obtained knowledge about ADHD along with their child's diagnosis (as well as along with their own symptoms). They willingly shared their know-how and co-operated with teachers, if only given a chance. In those few accounts, where successful partnership between home and school were reported, parents emphasized reciprocal openness in communication and respect as a key element in supporting a child diagnosed with ADHD at school. Yet, the

dominant accounts of parents were those constructing home–school relations as a constant power struggle with unwanted results: parents’ concern and point of view were either reluctantly taken into consideration by teachers or ignored.

### **Study 2: Adults with ADHD parenting children with ADHD**

ADHD as a neurobiological disorder means that similar symptoms of inattention and impulsiveness can be found in many members of the family, for example the child and his or her parent. According to Kendall and Shelton (2003) ADHD plays a determinant role in the family and it can increase the risk of having conflicts in human relations, divorces, lowered self-esteem, depression as well as social exclusion. Families should get support from a municipal social administrator and school administrator as well as from healthcare. However, in reality sometimes the parents with disabilities are not getting the services needed or even able to survive in the jungle of services (e.g. Kantojärvi 2012).

An interview case study (Sandberg 2012b) among the ADHD diagnosed parents (n = 3) showed that from the parents’ viewpoint the support offered to a family with ADHD by Finnish society has been weak. Parents felt that their own symptoms were underrated and that the family was not getting enough support. Parents were also worried about their children, especially if they had not gotten any help for the child showing symptoms of the disorder. The children were dropping out of school since no support was provided. Quitting school will complicate further studies and therefore getting into working life may be even harder.

Like Greene (2006) has stated: in a family where either of the parents has been diagnosed with ADHD, the parents’ interaction skills are in a key position. If the parent is not coping with his own disorder, it may be difficult for him or her to give adequate time and support to the child with a similar disorder, or to the siblings. Based on the interviews by Sandberg (2012b), it is evident that the disorder of the parent will affect the upbringing, daily rhythm and discipline:

“I am quick-tempered, impulsive, aimless, inventive and emotional. Anything but a rational and reliable adult.”

However, on the positive side the parents have reported that they can better understand their children with ADHD because of their own symptoms. Based on this, they might even dare to defend their child’s behaviour, for example in school settings, in order to better ensure that their child’s needs are being met accordingly.

“As a matter of fact it has been me who has supported the teachers and the school so that they can support my child and other children. It has been more in that order.”

Another noteworthy and neglected topic related to the families with ADHD is the status of the siblings in these families. Sandberg (2012a) interviewed ten siblings, aged between 3 and 13, from five different families with ADHD and found out how the siblings experience having ADHD in the family. The situation of a sibling of an ADHD child has been defined as being difficult, because the child with ADHD needs significantly more attention and care from the parents than others. Siblings with a sister or brother with a disorder may have to take responsibility for him- or herself earlier than they otherwise should (Sandersin 2004). In a study by Sandberg (2012a) it came out that the siblings could sense the concern and tiredness of the parents and tried to be as invisible as possible in order not to strain their parents any further. It was reported that siblings feel that the child with ADHD in the family irritates and annoys them and therefore they prefer spending their spare time outside the home (Sandberg 2012a). The results are in line with the research done by Parker and Stimpson (2004) according to which siblings with no ADHD want to protect their parents from further worries and

behave as well as possible. Moren (2001) stated that siblings often escape the distressing atmosphere of the family. Relations between siblings are very significant in the family and can compensate difficult social relations of the child with ADHD or even the lack of them. This should be taken into account when working with the families living with ADHD.

### **Discussion: Challenges ahead**

Despite the rapid growth of the diagnosis of ADHD among school-age children, there is a shortage of school-based research about the effective interventions as well as teachers' attitudes and knowledge of ADHD. Based on the comparison of the prevalence and the population served in SE we can assume that this group is probably underserved in the Finnish school system. Although some students may well survive with the help of a regular class teacher, this is not always the case. It is also clear that the teachers need more focused courses in this area. During basic teacher education this topic is met only occasionally. Again, the research raises the question of whether teachers' knowledge and understanding about ADHD as well as their capacity to meet parents with possible difficulties in coping with their child's school attendance alone should be evaluated and supported in both teacher education and in the field.

One more basic challenge in Finnish compulsory as well as upper secondary schooling is to implement and use evidence-based interventions at different tiers of support. On Tier 1, school-wide or classroom-wide interventions have only scarcely been used, despite the evidence of their efficacy in supporting students' behaviour and reducing disruptive behaviour (Epstein 2008). These kinds of interventions are the first line of interventions, which support all children in the school.

Again, at a more individual level (Tier 2) of support there is strong evidence for the effectiveness of behavioural interventions, when directly carried out, support the desired behaviour and reduce the problematic behaviour (e.g. Fabiano, Pelham, Coles & al. 2009). If these interventions are implemented within the classroom settings, the key person in imple-

menting them is the classroom teacher. These interventions are not utilized to their potential, and the use of these should be strongly encouraged. The special education teachers and school psychologists could possibly play important roles as consultants for classroom teachers in planning and implementing the interventions. Traditionally the role of special education teachers has relied more on the individual or on small group support for students, and the role of school psychologist on psychological assessment. For the benefit of students with ADHD symptoms it seems reasonable for these professionals to redirect their efforts to more direct support for classroom teachers.

Some children with ADHD symptoms require even stronger (Tier 3) support. On the basis of the principle of inclusion, the use of separate settings should be as limited as possible. Within small group settings the student can train and practice his/her learning and social skills and individually tailored behavioural treatments can be tried and developed. However, the methods applicable in small group settings are not, in many cases, easily applicable in regular classrooms. Clearly developing ways to transfer the methods used in small groups into regular classrooms are needed. This would require close co-operation between special educators and classroom teachers. This kind of Tier 3 support is very likely to enhance the possibilities for students with ADHD symptoms to participate in the natural classroom setting.

A future challenge at another level is to include training on behaviour management and school interventions for students with ADHD symptoms in basic teacher training. A short overview of the curriculums of the teacher education programmes at different universities indicates that, on average, only just over one per cent (3.7–3.8 credits out of 300, variability between universities was 0 to 8 credits) of the mandatory training was targeted on behaviour management and learning disabilities. Along with the launch of the three-tiered intervention model, the call for a teacher's know-how of special education has increased. This begs the question as to whether teacher training, as it is at present, prepares trainees with adequate ex-

pertise for the field and can meet the challenges of building fully inclusive learning environments. It is evident that researching parents' points of view can offer valuable additional information to the evaluation of the present state of comprehensive school practices, such as home-school co-operation. Finally, family relations within families with ADHD can be challenging; but, with appropriate internal effort, the status of the siblings, for instance, can be improved. That is, without such effort they might position themselves as secondary within the family unit, due to their adapting to a brother's or sister's more demanding needs of attention and care and, thus, adopting the role of a caretaker instead of one to be equally taken care of. The importance of the family relations should not be undermined when planning the effective intervention for pupils with ADHD.

### References

- ADHD (Attention-deficit/hyperactivity disorder, children and adolescents). Current Care guideline.* (2012). Working group appointed by the Finnish Medical Society Duodecim, the Finnish Association of Paediatric Neurology, the Finnish Society for Child and Adolescent Psychiatry and the Finnish Society for Adolescent Psychiatry. Finnish Medical Society Duodecim. Retrieved Jan 28<sup>th</sup> 2013. ([www.kaypahoito.fi](http://www.kaypahoito.fi))
- American Psychiatric Association (1968). *Diagnostic and statistical manual of mental disorders*, 2<sup>nd</sup> ed. Washington, DC: American Psychiatric Association.
- American Psychiatric Association (1980). *Diagnostic and statistical manual of mental disorders*, 3rd ed. Washington, DC: American Psychiatric Association.
- American Psychiatric Association (1987). *Diagnostic and statistical manual of mental disorders*, 3rd revised ed. Washington, DC: American Psychiatric Association.
- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders*, 4<sup>th</sup> ed. Washington, DC: American Psychiatric Association.

- Bax, M., & Whitmore, K. (1973). Neurodevelopmental screening in the school-entrant medical examination. *Lancet* 302, 368–370.
- Bax, M., & Whitmore, K. (1987). The medical examination of children on entry to school. The results and use of neurodevelopmental assessment. *Dev Med Child Neurol*, 29, 40–55.
- Clements, S. (1966). *Minimal brain dysfunction in children: terminology and identification*. Monograph 3. Washington DC: US Department of Health, Education and Welfare, NINDB.
- Connors, K., & Kinsbourne, M. (1990) (Eds). *ADHD attention deficit hyperactivity disorder*. München: MMV Medizin Verlag.
- DuPaul G.J., Anastasopoulos, A.D., Power, T.J., Reid, R., Ikeda, M.J., & McGoe, K.E. (1998). Parent ratings of attention deficit/hyperactivity disorder symptoms: factor structure and normative data. *J Psychol Behav Assessment*, 20, 83–102.
- Epstein, M. (Ed.) (2008). Reducing behavior problems in the elementary school classroom. National Center for Education Evaluation & US Department of Education. [http://ies.ed.gov/ncee/wwc/pdf/practice\\_guides/behavior\\_pg\\_092308.pdf](http://ies.ed.gov/ncee/wwc/pdf/practice_guides/behavior_pg_092308.pdf). Retrieved Jan. 28<sup>th</sup> 2013.
- Fabiano, G.A., Pelham, W.E. Jr, Coles, E.K., Gnagy, E.M., Chronis-Tuscano, A., & O'Connor, B.C. (2009). A meta-analysis of behavioral treatments for attention-deficit/hyperactivity disorder. *Clinical Psychology Review*, 29, 129–140.
- Faraone, S.V., Biederman, J., & Mick, E. (2006). The age-dependent decline of attention deficit hyperactivity disorder: a meta-analysis of follow-up studies. *Psychol Med*, 36, 159–65.
- Gillberg, C. (1981). Neuropsychiatric aspects of perceptual, motor and attentional deficits in six-year-old Swedish children. Uppsala University. [dissertation].

- Gillberg, C., & Rasmussen, P. (2001). Attention-deficit/hyperactivity disorder and deficits in attention, motor control and perception: overlap and comorbidities. In K. Michelsson & S. Stenman (Eds.). *The Many Faces of Attention Deficit/Hyperactivity Disorder* (pp. 19-42). Helsinki: The Signe and Ane Gyllenberg Foundation.
- Graham, L.J., & Jahnukainen, M. (2011) Wherefore art thou, inclusion? Analysing the development of inclusive education in New South Wales, Alberta and Finland. *Journal of Education Policy*, 26, 261–286.
- Greene, R.W. (2006). *Tulistuva lapsi. (The explosive child)*. Keuruu: Otava.
- Hagberg, B. (1975). Minimal brain dysfunction. *Läkartidningen*, 72, 296–300.
- Honkasilta, J. (2011). *Yksilöpatologiasta yhteisöpatologian – AD/HD-oppilas peruskoulupolulla (in Finnish) [From the pathology of an individual towards the pathology of a community – A student with ADHD on the path of comprehensive schooling. [Master’s thesis] University of Jyväskylä.*
- Hudziak, J.J., Heath, A.C., Madden, P.F., Reich, W., Bucholz, K., Slutske, W., Bierut, L. J., Neuman, R. J. & Todd, R. (1998). Latent class and factor analysis of DSM-IV ADHD: a twin study of female adolescents. *J Am Acad Child Adolesc Psychiatry*, 37, 848–857.
- Ingram, T.T.S. (1973). Soft signs. *Dev Med Child Neurol*, 15, 527–530.
- Itkonen, T., & Jahnukainen, M. (2010). Disability or Learning Difficulty? Politicians or Educators? Constructing Special Education in Finland and the United States. *Comparative Sociology*, 25, 182 - 201.
- Jahnukainen, M. (2003) Laman lapset? Peruskoulussa erityisopetusta saaneiden oppilaiden osuuksien tarkastelua vuodesta 1987 vuoteen 2001 [Children of the economic depression? Special education students at compulsory schools from 1987 until 2001]. *Yhteiskuntapolitiikka [The Finnish Journal of Social Policy]*, 68, 501–507.

- Jahnukainen, M. (2010). Different Children in Different Countries: ADHD in Canada and Finland. In L. Graham (Ed.) *(De)Constructing ADHD. Critical Guidance for Teachers and Teacher Education* (pp. 63–76). New York: Peter Lang.
- Jahnukainen, M. (2011) Different strategies, different outcomes? The history and trends of the inclusive and special education in Alberta (Canada) and in Finland. *Scandinavian Journal of Educational Research*, 55, 489-502.
- Jahnukainen, M. (2013). Special education in Finland. In C. R. Reynolds, K. J. Vannest, & E. Fletcher-Janzen (Eds.). *Encyclopedia of special education: A reference for the education of children, adolescents, and adults with disabilities and other exceptional individuals* (4th ed.). Hoboken, NJ: John Wiley and Sons, in press.
- Kantojärvi, A. (2012). Kognitiiviset vaikeudet ja vanhemmuus (Cognitive Deficits and Parenthood) (in Finnish). In M. Jahnukainen (Ed.). *Lasten erityishuolto ja opetus Suomessa (Children's special care and education in Finland)* (pp. 183–215). 13th Ed. Central League of Child Welfare. Tampere: Vastapaino.
- Kendall, J., & Shelton, K. (2003). A Typology of Management Styles in with Families Children with ADHD. *Journal of Family Nursing*, 9, 257–280.
- Kivirauma, J., & Ruoho, K. (2007). Excellence through special education? Lessons from the Finnish school reform. *Review of Education*, 58, 283–302.
- Lindahl, E., Michelsson, K., & Donner, M. (1988). Prediction of early school-age problems by a preschool neurodevelopmental examination of children at risk neonatally. *Dev Med Child Neurol*, 30, 571–589.
- Lääkintöhallitus (1986). *Tautiluokitus 1987* [Classification of diseases 1987]. Osa I. Systemaattinen osa (in Finnish). [Part I. Systematic part]. Helsinki. Valtion painatuskeskus.
- Michelsson, K., Ylinen, A., & Donner, M. (1981). Neurodevelopmental screening at five years of children who were at risk neonatally. *Dev Md Child Neurol*, 29, 40–55.

- Michelsson, K., & Ylinen, A. (1987). A neurodevelopmental screening examination for five-year-old children. *Early Child Dev Care*, 29, 9–22.
- Michelsson, K., Seppälä, P., & Näreneva, P. (1987). Neurodevelopmental screening for five-year-old children at child health centres. *Early Child Dev Care*, 29, 43–54.
- Michelsson, K. (2001). Attention-Deficit/Hyperactivity Disorder and Minimal Brain Dysfunction – symptomatology and diagnostics. In K. Michelsson & S. Stenman (Eds.). *The Many Faces of Attention Deficit/Hyperactivity Disorder* (pp. 9–18). Helsinki: The Signe and Ane Gyllenberg Foundation.
- Moilanen, I., Närhi, V., Olsén, P., Pihlakoski, L., Puustjärvi, A., Savolainen, A., Virkkunen, L., & Voutilainen, A. (2007). Lasten ja nuorten aktiivisuuden ja tarkkaavuuden häiriön (ADHD) hoito. *Duodecim*, 123, 3042–3058.
- Moren, R. (2001). *Sisarukset*. In B. Ahlgren, T., Grönlund, O., Hyvönen, R., Juntunen, M-L., Markkula, M., Martikainen, R., Matilainen, E., Mustonen, A., Raevuori, H., Valopaasi & M. Östman (Eds.). *Kouluopas (School guide)* (in Finnish). Sylva ry. Jyväskylä: Gummerus.
- Parker, J., Stimpson, J., Jänisniemi, L., & Tuomi, S. (2004). *Sisarussuhteet: kilpailua ja rakkautta (Sibling rivalry, sibling love : what every brother and sister needs their parents to know)*. (in Finnish). Helsinki: Otava.
- Polanczyk, G., de Lima, M.S., Horta, B.L., Biederman, J., & Rohde, L.A. (2007) The worldwide prevalence of ADHD: a systematic review and metaregression analysis. *Am J Psychiatr*, 164, 942–948.
- Pulkkinen, J., & Jahnukainen, M. (2011) *Erityisopetuksen järjestäminen ja rahoitus. Lakimuutosten vaikutusten seuranta kuntatasolla [Organizing and funding the special education. A follow-up of effects of the BEA amendment at municipality level]*. University of Jyväskylä. An unpublished report to Ministry of Education and Culture.

- Richardson, J.G., & Powell, J.J.W. (2011). *Comparing special education. Origins to contemporary paradoxes*. Stanford University Press: Stanford, CA.
- Rohde, L.A., Biederman, J., Busnello, E.A., Zimmermann, H., Schmitz, M., Martins, S., & Tramontina, S. (1999). ADHD in a school sample of Brazilian adolescents: a study of prevalence, comorbid conditions, and impairments. *J Am Acad Child Adolesc Psychiatry*, 38, 716–722.
- Rutter, M. (1982). Syndromes attributed to minimal brain dysfunction in childhood. *Am J Psychiatry*, 139, 21–33.
- Sabel, C., Saxenian, A., Miettinen, R., Kristensen, P.H., & Hautamäki, J. (2011). *Individualized service provision in the new welfare state: lessons from special education in Finland*. Sitra Studies 62. Helsinki: Sitra.
- Sandberg, E. (2012a). *ADHD-lasten sisarusten asema perheessä – vanhempien ja sisarusten haastattelututkimus (in Finnish) Sibling Equality in Families with ADHD Children - An interview study of parents and siblings*. [Master's Thesis] University of Helsinki.
- Sandberg, E. (2012b). *Erilainen vanhemmuus (in Finnish) Challenging Parenting - An interview study of parents*. [Bachelor's Thesis] University of Turku.
- Schmitt, B. D. (1975). The minimal brain dysfunction myth. *Am J Dis Child*, 129, 1313–1318.
- Schnoes, C, Reid, R, Wagner, M., & Marper, C. (2006). ADHD among students receiving special education services: A national survey. *Exceptional Children*, 72, 483–496.
- Smalley, S. L., McGough, J.J., Moilanen, I. K., Loo, S. K., Taanila, A., Ebeling, H., Hurtig, T., Kaakinen, M., Humphrey, M. A., McCracken, J. T., Varilo, T., Yang, M. H., Nelson, S. F., Peltonen, L., & Järvelin, M-R. (2007). Prevalence and Psychiatric Comorbidity of Attention-Deficit/Hyperactivity Disorder in an Adolescent Finnish Population. *J. Am. Acad. Child Adolesc. Psychiatry*, 46, 1575-83.

- Statistics Finland (2012). Special education (e-publication). Helsinki: Statistics Finland. Retrieved November 20, 2012 ([http://www.stat.fi/til/erop/tau\\_en.html](http://www.stat.fi/til/erop/tau_en.html))
- STAKES (1995). Tautiluokitus ICD-10. Systemaattinen osa [Classification of diseases ICD-10. Systematic part] (in Finnish). Helsinki: Valtion painatuskeskus.
- Taylor, H. G. (1983). MBD: meanings and misconceptions. *J Child Neuropsychol*, 5, 271–87.
- Valkama, K. (1991). MBD-pedagogiikka [MBD pedagogics] (in Finnish). Vaasa: Stencca.
- Zoëga, H, Furu, K, Halldórsson, M, Thomsen, P.H., Sourander, A., & Martikainen, J.E. (2011). Use of ADHD drugs in the Nordic countries: a population-based comparison study. *Acta Psychiatrica Scandinavica*, 123, 360–367.
- Wishart, D. & Jahnukainen, M. (2010). Difficulties associated with the coding and categorization of students with emotional and behavioural disabilities in Alberta. *Emotional and Behavioural Difficulties*, 15, 181–187.
- Webster-Stratton, C., Reid, M.J., & Beauchaine, M. (2011). Combining Parent and Child Training for Young Children with ADHD. *Journal of Clinical Child & Adolescent Psychology*, 40, 191–203.

Table 1

*Compulsory school students placed in Tier 3 level special education under categories “Varying degrees of cerebral dysfunction, physical disability or similar including ADHD” (VDC) and “Emotional and behavioural disorders” (EBD) in Finland in 1987, 2002 and 2010 (Jahnukainen, 2003; Statistics Finland, 2012)*

		School year		
		1987	2002	2010
Number of students	<i>VDC</i>	1171	3505	7344
	<i>EBD</i>	4315	3967	5894
Percentage (%)*	<i>VDC</i>	0.2	0.6	1.3
	<i>EBD</i>	0.8	0.7	1.1
Share of girls (%)**	<i>VDC</i>	na	26.7	27.6
	<i>EBD</i>	na	16.6	15.2

\* Percentage of the total compulsory school (Grades 1 – 9) population

\*\* Share of female students placed in special education under given category

na = information is not available for 1987