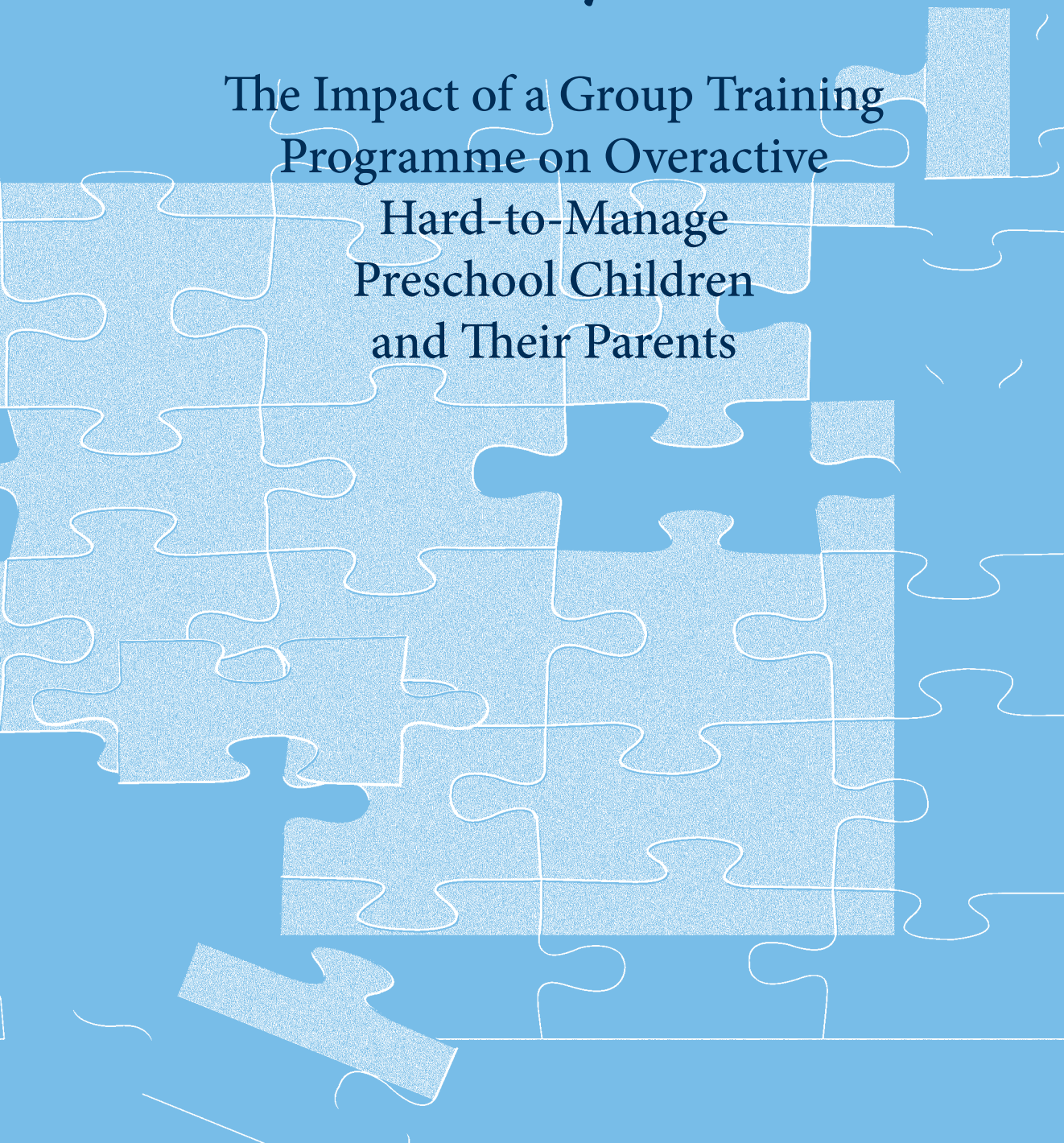
Eeva-Liisa Salmi

The Family School

The Impact of a Group Training Programme on Overactive Hard-to-Manage Preschool Children and Their Parents



Eeva-Liisa Salmi

Född 1958

Författaren är pedagogie magister (1986) och
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ABSTRACT

The current study investigated the effectiveness of a short-term parent group training programme called Family School POP (Preschool Overactivity Programme), aimed at parents having a preschool aged child (3-6-years old) displaying behavioural problems such as ADHD (Attention Deficit Hyperactivity Disorder), ODD (Oppositional Deficit Disorder) or CD (Conduct Disorder). The purpose of the Family School programme is to increase parents' skills and their self-confidence when they are bringing up a hard-to-manage young child. The Family School also aims at decreasing such children's disruptive behaviour by improving their social skills and ability to concentrate.

Forty-five mother-child pairs from the city of Helsinki and its immediate surroundings participated in this study. Thirty-three mother-child pairs completed the parent training programme, while 12 pairs formed the control group.

The treatment effects were measured by using a semi-structured interview named the Parental Accounts of Children's Symptoms (PACS) prior to the Family School programme (T1) and 6 months after starting the training (T2). PACS provides detailed information about children's emotional problems, inattention, hyperactivity, and oppositional/deviant behaviour. It reveals the parent's mode of action as a response to the above-mentioned behaviours. It also contains questions about demographic circumstances, and gives information about parental time spent with the children, and about the parent's warmth and criticism expressed towards the child.

The maintenance of the treatment effects was measured with the Strengths and Difficulties Questionnaire (SDQ) at T1, T2, and a one-year follow-up (T3). SDQ is a brief behavioural screening questionnaire that provides data of children's behaviour, emotional life, and human relations. The questionnaire also includes an impact supplement enquiring about distress, social difficulties, concerns, and whether the child's problems are chronic. The questionnaire was completed both by the parents and teachers.

Changes in parenting skills and child behaviour within the subjects and between the groups during the different time points was primarily analysed with the general linear model (GLM) repeated measures multivariate analysis of variance (MANOVA). Accordingly to current practice, effect size (ES) analyses were also conducted.

The results indicated improvements in both the mothers' and fathers' parenting skills after the Family School programme, although only mothers participated in the training. The improvement was especially notable in both the mothers' and fathers' general coping skills and in their coping strategies when their children were displaying ADHD- or CD-related behaviour. The Family School programme also had a positive impact on parental agreement. The results also revealed that the programme was especially effective in cases where the mothers possessed poor parenting skills prior to the training. Changes of equal size did not appear in the control group's parenting skills.

The mothers reported a significant decrease in their children's total behavioural difficulties. The children reduced their disobedience, were less hyperactive and anxious, and showed less severe conduct problems after the training. According to the teachers, the children's total behavioural difficulties and attention/hyperactivity problems also decreased at day-care. No such findings were obtained in the case of children assigned to the control group. The results should be treated with some caution, since the multivariate significance tests scores did not always reveal significant group differences.

The results indicated that behavioural changes were maintained both at home and at school at a one-year follow-up (T3). Both the parents and teachers reported a significant decrease in the children's total difficulties as compared to T1. The parents also reported a reduction of ADHD related behaviour, and conduct and peer problems between T1 and T3. According to the teachers, the children's conduct problems, problems with peers and inattentive/hyperactive behaviour had diminished significantly during the one-year period. When the raters were compared (mothers vs. teachers), the parents tended to be harsher in rating their children's behavioural problems. The results of this study support the hypothesis that short-term group intervention programmes can cause permanent improvements in parenting skills and child behaviour.

Keywords: Parent training programmes, evaluation, preschool children, attention deficit, hyperactivity, oppositional deficit, conduct disorders.

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INTRODUCTION

Problems with attention, over-activity, social disruption, and non-compliance are mentioned at the top of the lists in studies of children's behavioural problems (Fantuzzo, Stoltzfus, Lutz, Hamlet, Balraj, Turner, & Mosca, 1999; Schachar & Sergeant, 2002, p.126). Antisocial aggressive behaviour, hyperactivity-impulsivity, and inattentiveness are regarded as manifestations of externalising behavioural problems, while internalising problems, on the other hand, are characterised by symptoms of depression, anxiety, social withdrawal, and somatic complaints (Merell, 1996).

Several studies have shown that overactive, challenging behaviour in preschool-aged children seems to form a risk factor for several psychological and social problems later in life. Early conduct problems seem to be precursors of later delinquency (Tremblay, Masse, Perron, Leblanc, Schwartzman, & Ledingham, 1992), and attention deficits affect school achievements negatively (Fergusson & Horwood, 1995; Hinshaw, 1992; Mariani & Barkley, 1997). Early behavioural maladjustment also seems to be detrimental to the development of social skills, and it may cause delays in self-regulation (Brophy, Taylor & Hughes, 2002; Hughes, White, Sharpen, Dunn, 2000; Stevens, Quittner, Zuckerman, & Moore, 2002). According to Frankel and Feinberg (2002), problems with attention and hyperactive behaviour are associated with decreased resistance to provocation by peers, while defiant behaviour is associated with increased hostility towards peers and decreased respect for adults.

Furthermore, studies have shown that the emergence of early-onset conduct problems is related to a variety of health and behavioural problems later in life, e.g. drug abuse and depression (Campbell, 1995; Loeber, 1991). Externalising behaviour symptoms are seen as strong predictors of future conduct problems, and they are regarded as quite permanent (Bennett, Lipman, Brown, Racine, Boyle, & Offord, 1999; DSM-lV, APA, 1994; Sourander, 2001). According to Shastry (2003), 5-10% of school-aged children worldwide are exhibiting various behavioural problems such as carelessness, restlessness, disobedience and failure to stay quiet in class.

The present study investigates and evaluates a treatment programme called Perhekoulu POP® (POP= Preschool Overactivity Programme). This programme will subsequently be referred to as the Family School (*Perhekoulu* in Finnish). The origins of the above-mentioned problems as well as various methods of treatment will be discussed. The sample of the study consists of 3 to 6 year old overactive, hard-to-manage children and their parents

living in the immediate surroundings of Helsinki, Finland. The Family School is a parent and child mediated programme, the purpose of which is to enhance the quality of the parents' as well the child's daily life by increasing the parents' knowledge of children's behavioural problems in general, and by teaching both children and parents new skills in managing different kinds of challenging life situations. This kind of intervention is usually referred to as a Parent Training Programme (PTP) or Parent Skills Training Programme (PSTP). In the present study, the term Parent Training Programme (PTP) will be used as a reference to this category of intervention.

According to Cowan, Powell, and Cowan (1998, p. 59), numerous children are experiencing cognitive, social and mental health difficulties that may compromise their healthy development. It is sometimes suggested that young children's behavioural problems have increased and become more complex (Webster-Stratton, 1996, p. 438), although a more likely explanation appears to be that screening and diagnosing have improved. Behavioural problems may vary markedly in severity, permanence and frequency (Kazdin, 1993; Michelsson, 2001, p. 14). Emotional and behavioural problems in early childhood are often difficult to classify, due to the fact that most children at this age display disturbing behaviour to some degree (Sourander, 2001). According to the DSM-IV (APA, 1994, p. 81), it is especially problematic to diagnose children younger than 4 or 5 years of age, since their behavioural patterns are not yet established and also perfectly normal children may behave in ways that fill the criteria for behavioural problems presented in the manual.

Since challenging behaviour in young children has been proven to affect their subsequent life in harmful ways, professionals in child care agree with the opinion that these problems should be noticed and dealt with already at an early age (Semrud-Clikeman & Schafer, 2000; Sourander, 2001). The following behavioural problems may appear in various combinations, or isolated:

Attention-Deficit/Hyperactive Disorder (ADHD) comprises three primary symptoms: poor sustained attention, impulsiveness, and hyperactivity. The child has difficulties in sustaining and maintaining attention (ADD), and/or the child is behaving more hyperactively (HD) than is typical for its developmental level. Impulsivity is also associated with this disorder. The symptoms must have been present before the age of 7, and they must appear in at least two settings (e.g., at home and at day care, or at school). The symptoms must clearly affect other functions, such as social or academic, negatively. ADHD occurs in all cultures. The prevalence of ADHD disorders is estimated to affect 3-5 % of school-aged children (DSM-IV, APA, 1994, pp. 82-85).

A child who is continually disobedient, defiant, oppositional or hostile towards authority figures satisfies the criteria for *Oppositional Defiant Disorder* (ODD). When the child's behaviour repeatedly deviates from set and age-proper norms of prosocial behaviour, the child may suffer from C*onduct Disorder* (CD). In order for a child to fulfil the criteria of the diagnosis of conduct disorder, s/he might behave aggressively towards people or animals, or intentionally destroy his/her own property or that of others (DSM-IV, APA, 1994, pp. 85-94). However, behavioural patterns related to CD may already appear during preschool age. Young children may show high rates of oppositional, defiant, aggressive, and noncompliant behaviour. Behaviours such as threatening, theft, lying, fire setting, and running away are also typical for individuals with CD problems.

Due to recommendations in DSM-IV (APA, 1994, pp. 81-83) that very young children should not be diagnosed because their behavioural patterns are not yet clearly established, the abbreviation DBD (*Disruptive Behavioural Disorder)*, presented by Allen, Lewinsohn, and Seeley, (1998), and the terms *hard-to-manage children*, *children with challenging behaviour*, and *children with disruptive behaviour* will be used synonymously. These concepts are used in order to avoid exact and restrictive diagnostic terminology. Children with DBD usually have concentration difficulties; they are more impulsive and restless than their age-mates, and they may show more disobedience, temper tantrums and aggressive behaviour.

The sample of this study was a non-clinical one, and neither diagnosis nor formal referral is expected for the participation in the Family School programme.

Summary of key concepts

ADHD (Attention-Deficit/Hyperactivity Disorder)

The child has difficulties in focusing and sustaining attention in task or play. S/he is careless, easily disturbed by external stimuli (ADD = Attention Deficit Disorder). The child is motorically more restless than same-aged children and often impulsive. (HD = Hyperactivity Disorder).

ODD (Oppositional Deficit Disorder)

The child is frequently disobedient and often contradictory. S/he is impertinent, defiant, and argues with adults.

CD (Conduct Disorder)

The child has problems behaving acceptably according to general norms. S/he destroys his/her own property or that of others. S/he threatens others and might behave aggressively towards other people or animals.

DBD (Disruptive Behaviour Disorder)

The child has difficulties in maintaining concentration. S/he is often restless and impulsive, opposes adults and may have frequent tantrums during which aggressive behaviour may appear. Synonyms: hard-to-manage behaviour, challenging behaviour.

PTP (Parent Training Programme)

PTPs aspire to increase parents' knowledge about the most common behavioural disorders in early childhood. Their aim is also to teach parents new skills so that they can better manage everyday life situations with their hard-to-manage child. The programmes may be directed to parents only or they may also include tuition for the child.

Origins of disruptive behaviour

The literature provides a variety of opinions pertaining to the reasons for children's behavioural problems, and how different external factors affect the existence and development of such problems (e.g. Najman, Bor, Andersen, O'Callaghan, & Williams, 2000). According to Barkley (1995, pp. 43-44), problems with attention and hyperactive behaviour depend mostly on impaired inhibition. Control of behaviour requires a satisfactory development of five neuropsychological areas: memory, internal speech, self-regulation, ability to reconstitution, and motor control. The first four are primarily important for the inhibition of undesirable behaviour, as they control and organise goal directed behaviour, and assist in the modification of disruptive behaviour (Barkley, 1997). The inhibitory process in ADHD children is usually slower, and the reaction time to signals is longer (Barkley, 1997, Oosterlaan & Sergeant, 1996, 1998). In a meta-analysis of studies, Oosterlaan, Logan and Sergeant (1998) found that children with ADHD, CD, and co-morbid ADHD and CD did not differ significantly from each other with regard to mean reaction times and inhibitory functions. Co-morbidity is found to be high among children suffering from ADHD and DBD; up to 50% of all ADHD cases are co-morbid for ODD/CD (Kutcher, et al., 2004).

Some authors claim that young children's challenging behaviour could be explained by genotype or inheritance (Shastry, 2003)**.** According to DSM-IV (APA, 1994, p. 82), ADHD is more common in children with biological parents displaying similar types of behaviour. Biederman, Faraone, Keenan, Knee and Tsuang (1990) found that 25 % of children with an ADHD diagnosis were first-degree offspring to ADHD parents. At present, however, questions concerning the likelihood of heredity cannot be answered with certainty (Barkley, 1995, p. 55; Simonoff, 2001).

There is also disagreement about the role of poor IQ as an origin of behavioural problems. Hinshaw (1992) sees subaverage IQ as a possible underlying factor for behavioural problems. Individuals with mental retardation have been found to be at a significantly greater risk of displaying behavioural problems (e.g., aggressive or disruptive behaviour) and developing behavioural disorders than the general population (Borthwick-Duffy, Lane, & Widaman, 1997; Koskentausta, Iivanainen, & Almqvist, 2004). Koskentausta and her colleagues found in their study, conducted in Finland, that scores of total behavioural problems, including both internalising and externalising symptoms, were

highest among children who had moderate intellectual disability (IQ 35 – 49). The scores were higher especially among children aged 4 to 11 years. According to Barkley (1995, p. 86), children with challenging behaviour vary greatly with respect to IQ. Usually, the targets of these measures have been linguistic and mathematical skills. Barkley (1995, p. 86) points out that children with ADHD diagnosis may score an average of 7 to 10 points below their non-diagnosed age-mates on intelligence tests. However, he points out that the difference in performance may arise as well due to task-taking problems rather than from the level of intelligence (Barkley, 1995, p. 86). Hinshaw (1992) suggests that the underachievement in tests might derive from the fact that the children have not been able to absorb all the knowledge taught to them at school.

Several studies have shown that there is a connection between frontal lobe dysfunction and challenging behaviour (Barabasz & Barabasz, 1995; Rubia, Taylor, Smith, Oksanen, Overmeyer, & Newman, 2001; Semrud-Clikeman, Steingard, Filipek, Biederman, Bekken, & Reinshaw, 2000). This area is believed to be responsible for behavioural inhibition, directing and maintaining attention, the keeping up of self-control, and planning. Hawley (2004) found that two-thirds of children with traumatic brain injury exhibited notable behavioural problems. However, less than 10% of ADHD children can be clearly shown to suffer from brain injury (Barkley, 1995, p. 57).

Others have suggested that ADHD behaviour derives from disturbances in the brain chemistry (Sagvolden & Sergeant, 1998), i.e. from transmitter substance malfunctions (Sandberg, 1999, p.129) causing a slow or defective flow of information between the brain cells. These delays in the movement of information hamper control of behavioural regulation (Barkley, 1995, p. 58). Several studies suggest that the dopaminergic system may be involved in the pathology of ADHD (e.g. Shastry, 2003). Dysfunction in the dopamine secretion may cause deviations in affirming functions as well as in inhibition systems. Deviations may cause concentration deficits, motor hyperactivity and impulsiveness, by hindering the operation of the executive functions. This dopamine dysfunction is likely to be genetically determined (Johansen, Aase, Meyer, & Sagvolden, 2002; Sagvolden & Sergeant, 1998).

Electroencephalographic patterns in children with HD or ODD/CD combinations have also been found to differ from those of children without such behavioural disorders. Children behaving hyperactively usually tend to react slower, while defiant children with co-morbid conduct problems display reduced EEG amplitudes (Banaschewski, Brandeis, Heinrich, Albrecht, Brunner, & Rothenberg, 2003).

Children's behavioural problems may also have prenatal origins, afflicted by the mother's life-style. Children prenatally exposed to alcohol may be suffering from FAS (Fetal Alcohol Syndrome) or its less severe version FAE (Fetal Alcohol Effects). Maternal drug and alcohol abuse during pregnancy have been found to be precursors of behavioural problems and developmental deficits in offspring (Janzen, Nanson, & Block, 1995; Mattson, Goodman, Caine, Delis, & Riley, 1999; Nanson & Hiscock 1990; Richardson, Conroy, & Day 1996; Richardson, Ryan, Willford, Day, & Goldschmidt, 2002). Paternal substance abuse has also been found to be related to covert antisocial behaviour in children (Nigg & Hinshaw, 1998). Maternal smoking during pregnancy may also affect the child's psychosocial development later in life (Milberger, Biederman, Faraone, Guite, & Tsuang, 1997; Milberger, Biederman, Faraone, & Jones, 1998; Najman et al., 2000).

Disruptive Behavioural Disorder may also be associated with poor maternal emotional mode during the pregnancy (Allen et al. 1998). Milberg et al. (1997) found that maternal emotional disturbance soon after delivery could be related to disruptive behaviour in the children. Birth complications, such as difficult and long-lasting delivery, may also correlate with behavioural problems later in life (Allen et al. 1998).

Parental psychopathology, especially if the mother suffers from psychological health problems, seems to increase the risk for externalising behavioural problems in children (Connell, & Goodman, 2002; Najman et al., 2000). Boys with an ADHD diagnosis seem more frequently than others to have mothers with a tendency towards depression and anxiety. These maternal characteristics are primarily associated with external behavioural problems (Nigg & Hinshaw, 1998). Mothers with psychological health problems also tend to rate their offspring's behaviour as being more hostile-aggressive than healthy mothers (Lancaster, Prior, & Adler, 1989, Webster-Stratton, Hammond, 1990). According to Sroufe (1997), the parental psychiatric diagnosis is insignificant within the developmental perspective. A more important factor concerns the ill-effects it is causing to the patterns of stimulation, control, and dyadic interaction.

The risk for childhood and adolescence conduct disorders also seems to increase in cases where the mother is very young at the time of delivery (Najman et al. 2000). This relation is further enhanced if the mother has low SES (Socio-Economic Status) (Christ, Lahey, Frick, Russo, McBurnett, Loeber, Stouthamer-Loeber, & Green, 1990). Lower social status has been associated with higher hyperactivity and higher total behavioural problems (Kadesjö, Kadesjö, Hägglöf, Gillberg, 2001). Low SES often depends on factors like low parental education, parental unemployment, or single parenthood (Lavigne, Gibbons,

Christoffel, Arend, Rosenbaum, Binns, Dawson, Sobel, & Isaacs, 1996). These circumstances themselves have been regarded as factors associated with a heightened risk for behavioural and emotional problems (Harland, Reijneveld, Brugman, Verloove-Vanhorick, & Verhulst, 2002; Kalff, Kroes, Vles, Bosman, Feron, Hendriksen, Steyaert, van Zeben, Crolla, & Jolles, 2001; Lahey, Loeber, Frick, Hart, Applegate, Zhang, Green, & Russo, 1995). Sourander (2001) also found these above-mentioned factors to correlate with a higher level of problem behaviour in Finnish three-year-olds.

Difficult temperament (e.g. being difficult to calm, easily distracted, or having a short attention span) in early childhood is also an antecedent of subsequent problem behaviour (Guerin, Gottfried, & Thomas, 1997; Schmitz, Fulker, Plomin, Zahn-Waxler, Emde, & DeFries, 1999). A difficult temperament in a child indicates a major risk for later behavioural problems like aggressiveness or destructive behaviour (St. Jonn-Seed, & Weiss, 2002), whereas shyness has been found to predict internalising problems later in life. A challenging temperament is associated with both internal and external behaviour difficulties (Schmitz et al. 1999).

Language disorders are also sometimes seen in combination with an ADHD diagnosis or in other combinations with excessive inappropriate behaviour (Heiervang, Stevenson, Lund, & Hugdahl, 2001; Claude & Firestone, 1995; Kovac, Garabedian, Souich, & Palmour, 2001). For children five years or younger, a diagnosis of language disorders is more common than that of ADHD. Another common diagnosis for this age group is mental retardation, combined with different types of behavioural disorders (Kube, Petersen, & Palmer, 2002).

Kaiser and Hester (1997) suggest that parental characteristics like poor parenting skills and communication deficits affect parent-child interaction in ways that facilitate the development of conduct disorders. Parents possessing poor parenting skills are described as using *punitive discipline* (e.g. yelling, nagging, or threatening) or *physical aggression* (e.g. beating, hitting, or spanking); they are also described as being *inconsistent* as regards responding to child behaviour and setting limits. Punitive discipline and inconsistency have been associated with aggressive and oppositional behaviours (Stormshak, Bierman, McMahon, & Lengua, 2000). Mothers of ADHD children may perceive their children as a burden, and they may feel that they are not good enough mothers, lacking sufficient parental competence, i.e. having low parenting self-efficacy (Jones, & Prinz, 2005; Kadesjö, Stenlund, Wels, Gillberg, & Hägglöf, 2002).

The parents of hyperactive children report greater levels of anger and child rearing problems, and they may also be more inclined to describe their children as bothersome, thus

showing negatively expressed emotions (EE) (Marks, Cyrulnik, Kera, Berwid, Santra, & Halperin, 2006). Mothers' expressed emotions play a significant role in the development of emotional and behavioural problems. The expression of negative emotions, either in a verbal or in a nonverbal manner, initiates internal problems (St. Jonn-Seed, & Weiss, 2002). Hence the aforementioned authors apparently stress the implications of positive EE as protective factors against internal problems. Poor parental coping and the use of aggressive disciplinary methods are also associated with attention difficulties, and they are likewise seen as facilitators of conduct disorders (Woodward, Taylor, & Dowdney, 1998). Barkley (1995, p. 70), however, points out that there is no proof for the notion that poor parental child management on its own may cause ADHD or conduct disorders in children.

A connection between child disruptive behaviour, marital discord, and family violence has also been found. The onset of behavioural symptoms is often associated with ongoing family problems (Campbell, 1995). Children exposed to domestic discord and violence exhibit behavioural problems more often than children from harmonious homes (Smith, Berthelsen, & O'Connor, 1997; Grych & Fincham, 1990). Dissatisfied mothers also tend to use more harsh disciplinary measures towards their children than satisfied ones (O'Leary, Smith Slep, & Reid, 1999). Nigg and Hinshaw (1998) found that boys displaying complex behavioural problems had fathers with low agreeableness, who were clearly more neurotic and more likely to have general anxiety disorders. Boys with an ADHD diagnosis also had more often than others fathers with an ADHD history.

Sinkkonen (2000, p. 15) points out that mental development today is seen as an eventful, multiple factorial and multi-layered process, in which biological, genetic, and socially interactive factors play their own important roles. Since human beings are socio-psycho-physical entities, the impact of environmental factors on the development of behavioural deficits cannot be excluded. Demographic and social circumstances may also affect children's well-being and the development of behavioural disorders (O'Connor, Deater-Deckard, Fulker, Rutter, & Plomin, 1998).

Summary of origins of disruptive behaviour

- Young children's disruptive behaviour is thought to derive from an impaired inhibition of behaviour, based on slower inhibitory processes and longer reaction times to signals.

- It has been suggested that this is caused by one or a combination of the following factors:

    - disturbance in brain chemistry, i.e. transmitter substance systems malfunctions, such as in dopamine secretion,
    - dysfunction of the frontal lobe region,
    - poor IQ, or mental retardation,
    - language disorders,
    - genotype or inheritance,
    - birth complications,
    - the mother's lifestyle during pregnancy, e.g. substance abuse,
    - poor maternal emotional mode or psychopathology during pregnancy or soon after delivery,
    - teenage parenthood,
    - poor parenting and interaction skills,
    - marital discord and family violence,
    - low socio-economic status, e.g. parental unemployment or single parenthood.

Early interventions

Upbringing is a challenging task and it has been claimed that parents today more often than previously are in need of guidance in managing their children's behavioural problems (Linfoot, Martin, & Stephenson, 1999; Spitzer, Webster-Stratton, & Hollinsworth, 1991).

Smucker and Hedayat (2001) propose the following early intervention methods either to be used alone or as multimodal treatments for children and/or parents having a child with behavioural disturbance: (a) *Psychosocial interventions*, which aim is to help the children to gain social skills and develop a more satisfying interaction with peers, family members, and other adults. Satisfactory relations may also promote the child's self-esteem indirectly. This kind of treatment may be provided either on an individual or group (family) level. Counselling psychosocial interventions may help parents adapt to the challenges of living

with a child suffering from e.g. ADHD, and help them to learn new useful behaviour management skills and discipline strategies. (b) *Behavioural interventions*, which aim to encourage appropriate behaviour and to reduce improper behaviour by positive rewards. During intervention, knowledge of behavioural problems manifestations and possible operation modes to meet and reduce problems are distributed to the children or/and parents. The purpose of (c) *Educational interventions* is to affect the children's academic success by developing the child's strengths and by remediating their difficulties. The schools or the teachers are later responsible for determining whether academic skills training or other special education services are needed. Stimulant medication is one of the (d) *Pharmacological treatments*, the aim being to facilitate an improvement when dealing with excessive physical activity, inattention, impulsivity and poor self-control. It is worth noting that pharmacological treatment may not improve antisocial behaviour, reading skills or academic achievement directly. However, stimulant medication is found to improve 80 % of core ADHD symptoms. Adverse effects of pharmacological treatments are also reported, e.g. insomnia, decreased appetite, or headaches. There are also (e) *alternatives to drug therapy*, such as dietary modifications, nutritional supplements, homeopathy, or vision therapy.

According to Lange, Sheerin, Carr, Dooley, Barton, et al. (2005), parents of ADHD children report higher levels of authoritarian parenting than parents of normal children. Baumrind (1972) describes three types of parenting styles: *an authoritarian parent* is extremely controlling, cold and unresponsive towards the child; *a permissive parent* is warm and responsive, but exerts little control and makes few maturity demands concerning the child; an *authoritative parent* is warm and responsive to the child, s/he sets limits and provides structure when the child's behaviour threatens to go out of control. An authoritative parent can set standards for competent behaviour. Welles, Hinshaw, Pdiffer, Owens, Abikoff, et al. (2006) define this behaviour as *constructive parenting.* Constructive parents establish clear, age-appropriate expectations for children and respond with consistent and appropriate limits and consequences as needed in a warm and loving manner. This parenting style is surely the aim of most parent training programmes.

A variety of parent and child training programmes have been designed in order to improve parenting practices and reduce children's behavioural problems. According to Cowan et al. (1998, p. 7), PTPs attempt to achieve change in the parents' understanding of the quality of transactions between the parent and the child. Merell (1996) reviews three different kinds of early interventions which have demonstrated significant advances in the treatment of young children with internalising and externalising behavioural problems: (a)

the social skills approach is using traditional behavioural-cognitive methods which, however, should be age-appropriate for children who are developmentally on the preoperational level, (b) "Behavioural Momentum" programmes, which aim at increasing preschool-aged children's compliance based on reinforcement and mild discipline. The method pairs high compliance requests with lower compliance ones by starting with enjoyable requests, and when compliance has been reached at least three times, the original more demanding request is given to the child, (c) parent training programmes based on social learning theories, according to which many child behaviours, both positive and negative, result from observational learning and reinforcement within the family system. By increasing parents' communication and discipline skills the children's behaviour is affected positively.

Parental education has been provided as a form of early intervention since the 1960s, primarily to low-income families, a decade later also to families of at-risk children (i.e., teenage mothers, single or unemployed parents (Powell, 1988, pp. 2-4). According to Guralnick (1997, p. 3), the period between 1970 and 1995 was especially remarkable for the field of early interventions. Professionals then agreed that society is responsible for providing early intervention programmes for children whose development may be compromised as a result of genetic or environmental factors. There was also a general agreement about the fact that the early years are unique for influencing child development. Also Cowan et al. (1998, p. 59) highlights the importance of family interventions as reducers of children's cognitive, mental and social problems. Programme evaluations were not reported, however, until the late 1970s (Powell, 1988, pp. 5-8).

Behavioural parent training targeting both parenting skills and child behaviour may be the treatment of choice during the preschool years, when child behavioural problems peak and parents' stress and low parenting self-esteem are at large (Fisher & Fagot, 1996). This kind of intervention may particularly focus on parent-child relationships as well as help parents to develop the skills to manage young children's challenging behaviour. Parent-child dyads are provided direct coaching and immediate feedback from a clinician weekly, for 9-14 weeks (Nixon, 2002). Furthermore, the group training of parents and children provides immediate benefits on several fronts (Fisher & Fagot, 1996; Pisterman, Firestone, McGrath, Goodman, Webster, Mallory, & Goffin, 1992a; 1992b). The preschool period and the elementary grades appear to be especially optimal times to intervene with preventive programmes in order to prevent negative outcomes later in life (Webster-Stratton, 1993; 1998). Today, parent education programmes are based on parents' needs, and the programme leaders are seen as facilitators and collaborators rather than experts.

In PTP directed towards parents (usually mothers) or other primary caregivers, the emphasis is on allowing the parents or primary caregiver to receive supervision in the use of child management tactics and counselling about their children's general behavioural problems (Anastopoulos, Shelton, DuPaul, & Guevremont, 1993). The PTPs have generally been used when children are displaying severe emotional disturbance, a high level of aggression (Cowan et al., 1998), or when the children are showing other various kinds of behavioural problems (Dubey, O'Leary, & Kaufman, 1983; Kamps, Tankersley, & Ellis, 2000; Webster-Stratton, Reid, & Hammond, 2001) such as demands for attention, arguing, and disobedience (Linfoot et al., 1999). In parent training programmes, parents are also instructed in the principles of reinforcement, and taught how to identify antecedents of difficult situations. Usually this kind of intervention may be delivered to families as individual tuition when families are seen usually for 9-10 weeks in 2-hour sessions. The PTP's long-term effects may also be improved by adding teaching on how to solve personal and marital problems, and how to improve the mothers' extrafamiliar relationships (Nixon, 2002).

The above-mentioned behavioural problems, especially when combined with other stress factors existing in the family, are apt to put parents' and other child caregivers' patience and skills to a hard test (Anastopoulos et al., 1992). In these difficult upbringing situations, parents and child nurses may often feel irresolute and incompetent. In general, parents understand the rationale for various parenting principles, but difficulties arise at the point of their implementation in home environments. Therefore PTPs often include homework, i.e. the parents are supposed to introduce the newly learned skills at home also. This in turn may lead to permanent improvements in home settings (Pisterman et al., 1989).

Usually parents lean on informal networks (e.g. family members, other parents, and friends), when having a hard-to-manage preschooler, while professionals are used much less frequently. Parents with low parenting confidence, and parents having a child with complex and severe behavioural problems, are more likely than others to lean on professional assistance (Linfoot, Martin, & Stephenson, 1999). By instructing parents or other child caregivers about how to intervene and prevent children's deviant behaviour, these may be significantly relieved (Patterson, 1974).

Several studies agree on the conclusion that parent training programmes, both when used on their own or in combination with other types of intervention, appear to be effective (Baum & Forehand, 1981; Hemphill & Littlefield, 2001; Kazdin, 1995; Kazdin, Esveldt-Davson, French, & Unis, 1987; Pisterman, McGrath, Firestone, Goodman, Webster, &

Mallory, 1989; Rogers Wiese, 1992; Webster-Stratton, 1998; Webster-Stratton & Hammond, 1997).

After participating in a PTP, parenting skills are usually improved in several ways: parents become more positive and warmer towards their children (Berlin, Brooks-Gunn, McCarton, & McCormick, 1998; Irvine, Biglan, Smolkowski, Metzler, & Ary, 1999), they reduce their use of physical punishment (Berlin et al., 1998; Conduct Problems Prevention Research Group, 1999), and they have also been shown to reduce the level of negative feedback and coercive parenting style (e.g. Forgatch & DeGarmo, 1999; Pisterman et al., 1992b). After the training, parents become more skilled in reinforcing compliance, and in supervising their children in tasks demanding attention. They are also more able to give commands clearly (Pisterman et al., 1992b). According to Draper, Larsen and Rowles (1997), parents become more supportive and more capable at setting age-appropriate expectations for their children.

Some studies have also shown that changes in parenting skills may be associated with improved child outcomes (Berlin et al., 1998; Danforth, 1998; Forgatch & DeGarmo, 1999; Pisterman et al., 1992b; Pisterman et al.1989; Sheridan, Dee, Morgan, McCormick, & Walker, 1996; Strayhorn & Weidman, 1989). The ameliorated parenting skills usually affect parent-child interaction positively (Cowan et al., 1998; Forgatch & DeGarmo, 1999; Pisterman et al., 1989) by increasing the child's compliance (Pisterman et al., 1992b) and decreasing the internal conflicts in the family (Draper et al., 1997). It has also been documented that PTPs may prevent the development of children's socio-emotional problems (Berlin et al., 1998; Conduct Problems Prevention Research Group, 1999; Draper et al., 1997) and aggressive behaviour (Conduct Problems Prevention Research Group, 1999). The parent training programmes may also improve the children's task orientation and gross motor skills (Draper et al., 1997). However, Forgatch and DeGarmo (1999) point out that the changes in parenting skills cannot always be seen as predictors for changes in children's behaviour.

Parent training programmes also enhance the parent's feelings about being a competent parent (Pisterman et al., 1992a; Webster-Stratton & Hammond, 1997). Parental competence has been found to be related to low levels of child conduct problems (Webster-Stratton, 1998). Positive feelings about parenting increase satisfaction and reduce parental stress related to child behaviour and child characteristics (Pisterman, et al., 1992a).

Parent training programmes have been found to have major impacts on parents who use a coercive parenting style (Forgatch & DeGarmo, 1999), are less educated (Berlin et al.,

1998), and whose incomes are lower (Brooks-Gunn, 2003). Also single parents' children benefit more from PTPs than children with two parents (Cochran, 1988, p. 33).

The improvements gained by parent training programmes have been found to be permanent (Connolly, Sharry, & Fitzpatrick, 2001; Pisterman et al., 1992a; 1992b; Tremblay, LeMarquand, & Vitaro, 1999, p. 525) and in proportion to the numbers of sessions attended by parents (Berlin et al., 1998; Connolly, et al. 2001; Webster-Stratton, 1998). Especially the combination of parent and child training has been found to accomplish greater and more long-lasting improvements in child behaviour (Connoly, et al., 2001; Webster-Stratton & Hammond 1997). Hemphill and Littlefield (2001) found that the positive changes in children's externalising and internalising behaviour and social skills gained by a programme called Exploring Together were maintained, if not further improved, after 12 months. When PTPs are directed to families having an elementary school aged child, they may prevent school drop-out later in life (Vitaro, Brendgen, & Tremblay, 1999). However, Brooks-Gunn (2003) reminds that the effects achieved through early interventions will decrease over the school years and that we should not "believe in magic".

The wider the theoretical base, of the intervention the better the possibilities are to achieve positive and long lasting outcomes (Miller & Prinz, 1990). According to Webster-Stratton and Hammond (1997), a model combining parent training and child training is the best kind of intervention if one wishes to produce permanent improvements. In order to ensure that the impacts of an early intervention programme are as beneficial as possible, the PTP should be age-appropriate and tailored for the particular behavioural problem in question (Webster-Stratton & Hammond, 1997). If the PTP is effective, not only parents report improvements in the children's behaviour, the changes are observed and reported by other caretakers also (DeGarmo, Forgatch, & Martinez, 1999).

Parents themselves usually express a high level of satisfaction with PTPs (Baum & Forehand, 1981; Conduct Problems Prevention Research Group, 1999; Dubey et al., 1983; Webster-Stratton, 1998). They point out the value of the fact that parent groups provide a safe place where they can be honest about their difficulties, and that they have become aware that other parents have similar experiences and emotional responses. The PTPs have also helped parents to accept their imperfections in their role as parents, and increased their ability to accept and understand their children's temperaments and difficulties (Spizer et al., 1991).

As previously mentioned, a variety of parent and child training interventions have been applied. For example, self-administrated videotape training has achieved improvements in

parent-child interaction and children's conduct difficulties (Spitzer, et al., 1991; Webster-Stratton, 1996, p. 468). Individual instructions completed with telephone guidance, and even training at work places, have been utilised in order to increase parenting skills (e.g. Cowan et al., 1998; Lay, Blanz, & Schmidt, 2001; Nixon, 2002; Sutton, 1992). Even computer-assisted PTP has been tried (Gordon, 2000). The three most used and well-known PTPs in Finland are as follows: *Vanhempana vahvemmaksi* ("stronger as a parent") (Lajunen & Tasola, 1997), The *Käsikynkkä* ("arm-in arm") programme (Pesonen & Överlund, 1996) and the *Muksuoppi* ("kid doctrine") (Ahola, Birn, Furman, & Terävä, 2000). Their effects, however, have not yet been scientifically evaluated.

When disruptive behaviour disorders are clearly caused by neurobiological reasons, the targeted children may be treated with psychostimulants. Studies have indicated that careful medication may reduce symptoms of ADHD and ODD and decrease anxiety and problems with peers (Jensen & the MTA Group, 2002, p. 452). Medication is used very differently depending on the nation in question. In Europe, including Finland, the use of psychostimulants is rare (Sandberg, 1999, p.139). About 200 children received Ritalin at the turn of the century in Finland (Michelsson, 2001, p. 2).

Family background factors, such as substance abuse, marital problems, single parenthood and poor problem-solving skills may stand as obstacles for the achievement of PTPs' aims (Beauchaine, Webster-Stratton, & Reid, 2005; Webster-Stratton, 1993). Parental stress or psychopathology, as well as the breadth and severity of children's behavioural problems, may also influence the treatment impact negatively (Kazdin, 1995).

In order to increase the impact of the intervention, the parents' cognitions about behavioural disorders should be enhanced. More attention should also be paid to parents' role in the training, their experiences of the interventions and their social ties and networks (Hoza, Johnston, Pillow, Ascough, 2006). Eshelman and Loigman (1983) point out that lasting change in young children's behavioural problems may not be achieved by applying mere cognitive interventions. Lasting change demands an integrated behavioural and cognitive intervention model.

However, the literature suggests that training programmes indeed benefit families in a number of ways, and they may also pre-empt dysfunctional recursive cycles that can lead to secondary problems and protracted family pathology (Pisterman *et al.* 1992b).

Summary of early interventions

- Early interventions have been designed in order to improve parenting practices and reduce children's behavioural problems.

- The programmes may be aimed at parents only, or they can also comprise tuition for the children either simultaneously or separately from the parents.

- PTPs can be used when the **children** are displaying emotional problems, aggressive behaviour, disobedience, oversized demands of attention, and other more severe behavioural problems. They may also be utilised when the **parents** feel their parenting skills to be insufficient, or their self-esteem to be low, and when the children's upbringing causes high stress.

- In order to ensure the transmission into home environments, parents are usually given homework.

- They may be carried out as:

    * group training programmes,
    * individual guidance/therapy,
    * videotaped training,
    * telephone guidance,
    * training at work places.

For a summary of the effects of early interventions, see Table 1.

Table 1.
Effects of Different Kinds of Early Interventions.

Study	Intervention type	n	Impact of the intervention
Conduct Problems Prevention Research Group (1999)	PTP + CTP	891	Moderate positive improvements of children's social and emotional skills. Decrease in children's conduct problems. Increase in parental satisfaction and parental positive involvement. Decrease in parental physical disciplinary style.
Danforth (1998)	PTP + CTP	8	Improvements in parenting behaviour, and reduction in maternal stress. Decrease in children's oppositional behaviour.
Forgatch & DeGarmo (1999)	PTP (mothers)	238	Reduction in coercive parenting, and positive improvement in parenting practice. Indirect improvements in children's behaviour in school and at home.
Hemphill & Littlefield (2001)	PTP, CTP, CTP+PTP	145	Improvements in children's social skills, and reduction in behavioural problems at home. Positive results maintained at 6- and 12-month follow-up assessments.
Nixon *et.al. (2004)*	PTP + CTP	54	Effects of short form treatments are as long lasting as those of long term interventions.
Pisterman *et al.* (1989)	PTP	46	Improvements in parental interaction style and management skills. Positive improvements in child compliance. Maintained treatment effects at 3-month follow-up.
Pisterman *et al.* (1992a)	PTP	91	Reduction of parental stress, and increase in parental sense of competence. Positive changes in mothers' affects towards their child.
Pisterman *et al.* (1992b)	PTP	57	Positive effects on child compliance, but not on attention. Improvements in mothers' skills at handeling the children's disobedience. Positive effects on mother-child interaction.
Strayhorn & Weidman (1989)	CTP + PTP	89	More extensive interventions produced more significant improvements in children's attention and external behaviour problems. They also decreased children's emotional symptoms more in comparison with minimal treatment.

Table 1. cont.

Webster-Stratton (1996)	CTP + PTP (self-administrated videotapes)	78	Improvements in parent-child interaction, and a reduction in children's conduct difficulties. Positive treatment effects in children's social skills and problem-solving strategies. Training in marital communication, problem solving, and conflict resolution improved the treatment effects.
Webster-Stratton & Hammond (1997)	PTP, CTP, CTP+PTP	97	solving and conflict management skills CTP was most effective in improving children's prosocial skills in school settings. PTP and PTP+CTP increased positive interaction between parents and children. CTP+PTP produced the most significant improvements in child behaviour at one year follow-up.
Webster-Stratton (1998)	PTP + TO	394	Decreased parents' critical remarks and commands. Reduction in maternal harsh discipline practice. Changed the feelings of parenting in more positive direction, and heightened feelings of parental competence. Children increased their social competence, showed less conduct problems and non-compliance. Reduction in their level of negative affects.

PTP = Parent training programme, CTP = Child training programme, CTP+PTP = combined child and parent training programme, and
TO = training aimed at others (e.g. teachers, family service workers)

Parents as raters

The examination of young children's behavioural problems is usually based on reports completed by either parents, preschool teachers, or other child care providers. A variety of instruments have been used, such as interviews, questionnaires, and observation. The information is said to be most trustworthy when multiple informants and methods are used (Atkeson & Forehand, 1978; DSM-IV, APA, 1994, p. 83; Nixon, Sweeney, Erickson, & Touyz, 2004; Webster-Stratton & Lindsay, 1999).

Numerous studies have shown that parents are reliable estimators of young children's developmental problems and deviant behaviour (e.g. Fisher & Fagot, 1996; Gadow & Nolan, 2002; Merydith, 2001; Richman & Graham, 1971; Strayhorn & Weidman, 1989). Parental interviews are not only recommended for child behaviour surveys, they are also especially convenient as diagnostic interviews in clinical settings (Kadesjö, Kadesjö, Hägglöf, & Gillberg, 2001). Barkley (1990, pp. 234-236) points out that parental interviews are indispensable for the investigation of children's problems. According to him, parents possess the most comprehensive knowledge about their children's earlier life history, behavioural manners, social interaction, and relationships. Parents are also able to reveal descriptive and informative data about their children's actual living conditions, and how much the child's apparent problems distress their family life. During the discussion, the interviewer may also receive valuable information concerning the relationship between parents and child. Based on this information, a skilled interviewer may generate a general view of the family's psychological integrity, and also receive knowledge about possible contributors to the children's problems. If uncertainty appears, specifying questions may easily be asked during the interview (Barkley, 1995, p. 115). The Conduct Problems Research Group (1999) supports Barkley's position about parents as raters, and points out that parents are in an optimal position to be the primary agents of children's behavioural change.

Fisher and Fagot (1996) stress that the estimator of a specific problem should be familiar with the context in which the problem appears. Young children's behavioural problems are likely to emerge at day care as well as at home. Few adults spend as much time with children as the teacher. That is why teachers' opinions form a critical part of the evaluation of children's behavioural difficulties (Barkley, 1995, p. 120). A certain level of concurrent agreement has been found between parents' and teachers' ratings of children's behaviour (e.g., McConaughy, Stanger, & Achenbach, 1992; Kolko & Kazdin, 1993), but

contrary findings are also available. Fagan and Fantuzzo (1999) found no significant relationship between parents' and teachers' ratings of children's social skills and problem behaviour. However, they found a significant conformity between mothers' and fathers' ratings of their children's behaviour.

A reason explaining why teachers' and parents' descriptions of a specific child's problems are not always in agreement with each other (see also Nadder, Silberg, Rutter, Maes, & Eaves, 2001), could be that the child behaves differently at home than at day care (Fisher & Fagot, 1996). Parents and teachers also vary in their familiarity with the child (Barkley, 1990, pp. 234-236).

According to Gadow and Nolan (2002), parents can clearly identify divergent behaviour (ADHD, ODD) from normal child behaviour, but they may have difficulties in accurately naming which behavioural problem is in question. Teachers are seen as more accurate than parents in rating young children's externalising behavioural and attention span problems (Merydith, 2001). Disagreement between parents' and teachers' ratings is seen mostly when children's emotional and internalising problems are estimated (McConaughy et al., 1992).

Interviews and observations are time consuming and laborious to interpret. Questionnaires, on the other hand, are easier to distribute and interpret, but sometimes parents and teachers have found them disconcerting, especially if they only focus on undesirable traits. Respondents have also wanted to identify the children's strengths as well as their weaknesses (Goodman, 1994).

It has been argued that parents who are troubled themselves will not always be able to recognise difficulties in their children (Strallard, Norman, Huline-Dickens, Salter, & Cribb, 2004). As previously mentioned, mothers who suffer from mental health problems may rate their boys as more aggressive and hyperactive than they really are (Lancaster et al., 1989). This inaccuracy can be avoided by using exterior estimators, such as teachers.

According to Squires, Bricker, Heo, and Twombly (2001), the slow emergence of suitable screening instruments for young children's behavioural problems may have led to many problems being overlooked. Under these circumstances, problems may have already developed to serious levels, when professional help and more requiring interventions would have been needed. Early reliable identification of young children's emotional, behavioural, or social problems is a matter of great importance for the children's development and future well-being (Squires et al., 2001). When the children's difficulties and their possible origins are identified at a young age, interventions may prevent poor developmental outcomes, and

stop the problems from developing to serious levels (Grych & Fincham, 1990; Squires et al., 2001).

Summary of measurements of children's behaviour

In evaluation studies, children's behaviour is usually measured with the following:

- interviews,
- questionnaires,
- observations,
- multiple measurement instruments.

Raters may be the following:

- parents,
- teachers,
- healthcare professionals,
- trained observers.

Parents are regarded as reliable estimators of young children's behavioural difficulties, but the most reliable information is obtained if multiple measurement informants and methods are used.

The Family School POP (Perhekoulu POP®)

The Family School POP is a cognitive-behavioural intervention programme intended for families having a preschool-aged child (3 – 6 years old) and whose behaviour is perceived by the parents as being challenging, meaning that the child is hard to bring up. The Family School has functioned in Helsinki since 1999 in the premises of the local ADHD centre. Its methodology is based on the Preschool Overactivity Programme (POP) developed by Barton and Sandberg (1993) at the Department of Child and Adolescent Psychiatry of the University of Glasgow. It was adapted to the conditions in Finland by Sandberg, Santanen, Jansson, and Lauhaluoma (1999). The methods used in the programme are not entirely new, but they are perceived as suitable for young children with complex behavioural problems,

including emotional problems (EM), hyperactive behaviour (HD), attention deficits (ADD or ADHD), and oppositional/defiant disorder (ODD) or conduct disorder (CD).

No formal referral is required in order to be accepted to the intervention programme. Parents' motivation and desire for change in their upbringing methods are considered as sufficient reasons. Prior to starting the programme, parents will have acquainted themselves with the Family School programme through information booklets distributed to child health centres, kindergartens, and family advisory centres.

The Family School lasts ten weeks, during which parents and children (in separate groups) gather once a week for a time-span of four hours in the ADHD centre's premises. Five parent-child pairs attend each programme.

In the children's group, *concentration, impulse control, and prosocial behaviour* are practised through play, tasks, and other activities. The daily programme follows a special routine, although its contents may vary. The first half of the morning session is engaged in *free play,* during which the child can freely choose to play with the variety of toys and games available in the room. During the free play session, the child directs the course of the game and the assisting adult only helps the child with modelling behaviour if needed. A controlled exchange of play is allowed, and joint play is encouraged. During the second half of the morning the child chooses a *special game,* which s/he plays for the following 30 minutes. Now the child practices concentration. A change of game is not allowed, and the assistant helps the child to keep on playing by actively listening and observing. If the child's concentration slackens during the play, the assistant's job is to inspire and direct the child back into playing.

After the early morning session, a short 15-minute *break* is held, during which the children are served water and a biscuit. Prosocial skills are emphasised during the break. The children are encouraged to practice impulse control, listening, and to wait for their turn.

The late morning session begins with a ½-hour *exercise moment.* The purpose of this is to give the child an opportunity to "let off steam", albeit in safe conditions. The purpose of this moment is to also develop the control and coordination of muscles. Next, the *diary page* is made. The assisting adult writes something positive that has happened during the morning, and the child can complete the page with pictures or stickers. After this, follows a short *joint play* moment. The morning session ends at 12 o'clock with a 1-hour lunch break in company with their parents. The afternoon's last hour begins with a ½-hour *exercise moment* and continues with a *music session,* lead by a music therapist. The goal of the music session is to teach the children to follow given instructions, to play together, alone and when they have

their own turn. The day ends with *story-telling.* (For the timetable and a more detailed explanation of activities, see pp. 26-27).

A specially trained kindergarten teacher observes the group through a one-way screen, and is able to supervise and give positive feedback or personal instructions to the assistants through a wireless earphone whenever needed. All the assistants in this study have been child care professionals from diverse places of work, e.g. kindergartens, hospitals' childcare departments, and family counsellor centres.

The parents' group also follows a predefined programme, presented in a manual given to the parents at the start of the Family School. The parents' booklet includes *guidance readings, instructions, and homework assignments*. The aims of the parent training are (a) to increase the parents' *knowledge about reasons for their children's behavioural problems* and the manifestations of them, and (b) to teach parents *new and more suitable methods on how to deal with situations* in which their children behave badly. Furthermore, the aim is (c) to encourage parents to *modify the newly learned techniques so that they suit their own children* and their daily problems at home better. As mentioned, parents also get *weekly homework*, through which they practice the new skills taught at the Family School. The homework plays an important role, facilitating the parents to transfer their newly learned skills to their families' everyday life.

The parent group is led either by a psychologist or a social worker employed by the ADHD centre. In the parents' group, *interactive dialogue* is used as the main teaching method. In this regard, the participating parents also act as a giving part. Two observers also participate in the parent group. Their function is to observe the group's reactions and share their perceptions with the group leader and with the assistants during the feedback hour held immediately after every Family School session.

Every training session starts with a *review of the previous session and the past week's homework.* The parents describe their week and report how they have managed with their given task. They may also report if something special has happened during the past week. At this moment the caregivers may share their experiences with each other and receive advice from both the supervisor and the other participating parents on how to manage similar situations in the future. The following hour after the coffee break is reserved for *education*, during which parents receive information about the reasons for and the manifestation of disturbing behaviour and how to proceed in different kinds of problematic everyday life situations. Then the parents and their children have a joint *one hour lunch and outdoor activity break.* The afternoon begins with a short *summary of the new subject, and homework*

is given and explained to the parents. The end of the day is spent *viewing videos filmed from the children's group* activities.

Every weekly session has a special theme. The session themes for the 10 weeks as presented in the Family School handbook are: (1) *Introduction,* during which the parents are told the principles of the Family School, and the manifestations of challenging behaviour, its origins, occurrence, and treatment are described. (2) *Understanding the child's behaviour*, during which the parents are taught how to manage different kinds of difficulties in everyday life situations. During this session they are also taught how to manage attention seeking behaviour in a positive manner, by spending more time with the child, e.g. by playing games or doing housework together. (3) *Effective communication,* during which the parents are explained the importance of the compatibility of non-verbal and verbal communication, and the difference between requests and commands are also explained. Parents are also taught the importance of eye contact. (4) *Strengthening desirable behaviour*, during this session the parents are taught how to confirm child behaviour by using non-material rewards such as praise, hugs and smiles . The effect of praise on child and parent self-esteem is discussed, and instruction on how to restrain oneself is given. (5) *Tangible rewards,* this time the use of stickers, for example, is explained. The effects of either agreed or unexpected tangible or non-material rewards are discussed. (6) *Setting limits,* during which the parents are taught how to support the child to bear the negative consequences of misbehaviour. They are also taught how to direct the child to choose behaviours with positive consequences. (7) *Time-out*; the only "punishment" of the Family School. Parents are taught how to do it, and when to use it. Time-out is used for behaviours which cannot be ignored, i.e. for more serious misbehaviour which is very naughty or dangerous. During time-out, the child is placed on a chair or in another predetermined place where s/he can be watched for about 5 minutes. (8) *Management of misbehaviour in public places/outside the home*, during which parents are explained the importance of anticipation of upcoming situations. The benefits of making plans in advance are discussed. Ignoring undesirable behaviour and rewarding desirable behaviour are recommended as alternative behaviour management methods. (9) *The future*, during this session future behavioural problems are anticipated, together with a vigorous repetition of the central modes of action. (10) *Repeating review* is a time for questions.

It is desirable that the assistants in the children's group and the observers in the parent group should utilise their new know-how in their principal work communities. During a ten-week training period, the assistants and the observers are educated as parent/child skills trainers, and after the education, they will be able to establish similar projects in their own

home areas. These so-called “satellite family schools” are modified versions of the Family School POP, and the directors are themselves responsible for the contents and practices.

Summary of session schedule

Family School session schedule

9.00	Staff training	
	CHILDREN’S GROUP	PARENTS’ GROUP
10.00	Free play	Review of previous session and homework
	Individual/special play	Coffee/tea
11.00	Biscuit break	
11.15	Exercise session	Education
	Diary page	
	Group activities	
12.00	Joint lunch and outdoor activity break	
13.00	Exercise session	Summary of new subject, homework
	Music session	Questions
	Story-telling	Videos from the children’s group
14.00	Family School closes	
14.00	Staff debriefing session	
15.00	End of the day	

Table 2.

Summarised Explanations of Activities in the Family School

Free play	The same selection of toys and puzzles are used each week. The assistant encourages the child to play, and serves as a facilitator promoting positive activities. The child is allowed to change the play activity. Themes for play: Shop, restaurant, home, parking garage, zoo. In addition, there are books, games, puzzles, and assembly kits.
Special play	The child is encouraged to engage in one specific activity. These games are usually completed on a table surface. Examples of themes for play: in the office, at the doctor, different kinds of assembly kits, and plasticine.
Joint play	Games with simple rules, which enable controlled motor activities.
Exercise session	Examples of equipment: trampoline, balance and slide boards, rollo-nut ball, relaxation shell.
Music session	Different kinds of easily controllable instruments, e.g. drums, pipes, and rattles are used. Nursery songs in which children can easily unite.

Summary of Family School POP practices

- The Family School POP is based on the Preschool Overactivity Programme developed by Joanne Barton and Seija Sandberg (1993).
- The Family School is intended for families having a 3 – 6-year-old child, whose behaviour is perceived by the parents as being excessively challenging.
- No formal referral is required: parents' desire for change is a sufficient reason for participation.
- It is considered suitable for children suffering from EM problems, ADHD, or ODD/CD problems.
- It consists of parallel, albeit separate parent and child groups for a period of 10 weeks each.
  Group sessions take place once a week, for 4 hours.
  Each programme includes 5 mother–child pairs.

In the **Child Group,**

- the children practice concentration, impulse control, prosocial skills and co-operation skills through different kinds of play, tasks, and other suitable activities.
- The group is led by a special kindergarten teacher, and each child has a personal assisting adult.

In the **Parent Group,**

- The parents receive knowledge about manifestations and reasons for common behavioural problems in early childhood.
- The parents are taught more suitable and effective management methods to deal with their children's challenging disruptive behaviour.
- The parent group is led by a trained social worker or a psychologist. Interactive discussion is used as the main method of teaching.
- Parents receive weekly homework.
- Two observers participate in the parent group.

Research questions and design of the study

The overall aim of the present study was to evaluate the impact of a short-time group-based intervention programme called the Family School on hard-to-manage preschool-aged children and their parents. Since this was the first time an evaluation study of this programme has been conducted in Finland, the aims of the study are not presented in forms of hypotheses, but as research questions. The present study addresses the following questions:

1. Does the Family School have an effect on the mothers' experience of their parenting skills?
2. Can the Family School affect changes in the emotions that the mothers express towards their children?
3. Does the Family School have an impact on the mothers' experience of their spouses' parenting skills and parental agreement?
4. Is the Family School able to achieve changes in the children's challenging behaviour?
5. Do the parents' and teachers' ratings of the children's behaviour problems differ from each other?
6. If there are experienced changes in the children's behaviour, and the parenting skills, how are they related to each other?
7. If there are changes in the children's behaviour, are they experienced as permanent still after one year?

This study is of a summative nature, meaning that the emphasis is on the evaluation and documentation of intervention effects (Robson, 2001, pp. 77-84). Evaluation studies may use either qualitative or quantitative methods for the measurement and description of what really happens to the participants (Robson, 2001, p. 27-28). In this study, the quantitative methods are mainly used. The study uses a quasi-experimental pre-post research design, where repeated measures analyses are performed on both the experiment (intervention) and the control (no intervention) groups. The pre-measurements were performed before the experiment group started the Family School programme (T1). Post measurements were made

six months (T2) after beginning the intervention programme. Equal measures were carried out for the participants referred to the control group.

The application of a control group improves the reliability of evaluation studies remarkably. If the comparative analyses show statistically significant differences between the groups, the modifications in the treated persons/families can be attributed to the intervention programme (Robson 2001, pp. 87-89). For evaluation studies it is also common to measure the permanency of potential changes. In this study, the permanency of the treatment effects was measured one year after starting the Family School programme (T3).

In this study, the research sample was not randomly assigned; the participants were selected to participate in the study due to the fact that they were hard- to- manage children with their mothers. Accordingly, the groups are referred to as non-equivalent groups (Robson, 2001, pp. 90-93; Metsämuuronen, 2005, pp. 97-98).

Evaluation studies are considered especially problematic to carry out; the participants are inherently complicated, the interventions may be many-faceted, the issues to consider are multiple, indicators may be imprecise, and even the personal qualities of actors or estimators give rise to obstacles (Robson, 2001, pp. 85-87). The generalisability of the results may be limited due to small sample sizes, incalculable effects of internal or external agents, between-subjects variances, or group heterogeneity (Ahonniska-Assa, 2000, pp. 9-12).

METHODS

Participants

Forty-five mother–child pairs from the city of Helsinki and its immediate surroundings participated in the study. Of these, 33 pairs participated in the Family School POP programme during the years 2000-2002, generating the experiment group. The remaining 12 pairs served as controls. Criteria for acceptance to the Family School were that (a) the child was between three and six years old, (b) the parents experienced the child's upbringing as challenging, (c) the child had no intellectual deficit, (d) the child did not receive any psychopharmacological treatment, and (e) the parents had to be motivated to change their parenting style. The initiative to participate in the Family School was taken by the parent.

Among those willing to participate, Family School employees (either a psychologist or an

experienced social worker) selected the participating mother-child pairs after a screening interview. In this interview, the above-mentioned conditions for participation were clarified. A formal referral was not required, and any particular diagnosis was neither a requirement nor an obstacle for participation. Nine (27.3%) children belonging to the experimental group had been diagnosed with ADD and linguistic delays. Five (15.2%) were diagnosed as suffering from HD, and two (6.0%) had linguistic difficulties only. Two (6.0 %) had been diagnosed as suffering from slight developmental delays. Fifteen (45.5 %) children of the experiment group had no diagnosis at all.

From the parents' assessments at T1 with SDQ, it appeared that almost half (45.5 %) of the children participating in the Family School had had behavioural problems longer than one year. The children's disruptive behaviour interfered a great deal with the family life for 39.4 %, and quite a lot for 33.3 % of the families. Over half (51.5 %) of the parents were of the opinion that the children's challenging behaviour disturbed the family very much. Usually, the behavioural difficulties did not upset or distress the child itself at all (33.3 %). According to the parents (51.5 %), the children's behavioural problems hampered peer relations quite a lot.

More than the half of the teachers (51.5%) were of the opinion that the children's behavioural problems interfered to a great extent with the day care group's activities. Peer relations were disturbed quite a lot in the case of 33.3 %, and for 39.4 % of the children the behavioural difficulties hampered the classroom learning fairly much.

The control group was recruited from the Helsinki University Central Hospital, Department for Learning Disabilities and Developmental Delays. Children and youths are referred to this department by healthcare centre doctors for variable reasons (e.g. ADHD-problems, linguistic problems, developmental delays or learning disabilities). Among these clients, the chief neurologist of the department completed a preliminary selection in order to gain the maximal correspondence between them and the experiment group. From the very beginning our intention was to gather a control group of the same size as the experiment group. We also wanted the control group to correspond to the experiment group with respect to age, sex, and behavioural difficulties. This task turned out to be more difficult than assumed. During this period, it was impossible to obtain a control group as large as the experiment group out of the number of children referred to the University Hospital from healthcare centres. For this reason, the study had to be content with a smaller control group (n = 12), matching the experiment group with respect to age and sex.

As Table 3 reveals, the treatment and the control group did not differ from each other with respect to age and sex at the baseline time (T1). Based on the PACS interview and the SDQ questionnaire, there were, however, significant differences between the groups in regard to severity of ODD problems [$t_{(43)} = 2.371$, $p < .05$] and CD problems [$t_{(43)} = 2.224$, $p < .05$]. (cf. Tables 4 and 5). According to a separate ANOVA, there was also a group difference with respect to the total difficulties score (see Table 5). (The total difficulties score could not be analysed in the same MANOVA as the SDQ subscales, since it was calculated as a combination of these, and therefore dependent on them) Children included in the treatment group displayed more challenging behaviour in these sectors than those in the control group. The children in the control group did not receive any psychological treatment; neither did they participate in the Family School during the 6-month follow-up period.

According to the ratings made by teachers, the test results were in line with those of the parents. The multivariate results revealed no significant differences between the treatment and the control group at T1. However, the teachers also rated a significant group difference with regard to the CD-problems subscale prior to the training (cf. Table 5), i.e. the teachers agreed with the parents that the children of the experiment group showed more conduct problems than the children assigned to the control group did at T1. However, unlike the parents, the teachers did not report a significant group difference with regard to the children's total difficulties scores (Table 5).

Table 3.

Means and Standard Deviations for the Age of the Experiment and Control Groups at Baseline (T1).

	Experiment group (n=33)		Control group (n=12)	
Girls	15 %	(5)	20 %	(2)
Boys	85 %	(28)	80 %	(10)
	M	*SD*	*M*	*SD*
Child's age	5.2	1.2	5.0	1.4
Mother's age	35.5	7.4	34.3	4.9
Father's age	36.9	6.8	37.0	5.3

Table 4.

Means and Standard Deviations of Variables in the PACS Interview for the Experiment Group (n = 33) and the Control Group (n =12) at Baseline.

	Experiment group		Control group		
	M	*SD*	*M*	*SD*	
Mothers' parenting skills	2.81	0.57	3.00	0.59	
Fathers' parenting skills	2.73	0.69	3,03	0.59	
Parental agreement	3.10	0.79	3.56	0.55	
Child behavioural problems					
Child's EM problems	0.51	0.30	0.48	0.25	
Child's ADHD problems	1.11	0.43	1.04	0.48	
Child's ODD problems	1.76	0.61	1.30	0.45	*
Child's CD problems	0.98	0.52	0.61	0.38	*
Child's total behaviour symptoms	1.10	0.33	0.86	0.32	*
Child's ODD problems frequency	1.83	0.70	1.65	0.54	
Child's CD problems frequency	1.07	0.67	0.80	0.62	

* = p< .05

Table 5

F and p-Values from Four Between-Subjects Analyses of Variance Based on the SDQ Questionnaire, Measuring the Group Differences between the Experiment and the Control Group, Rated by Parents and Teachers at T1.

Scales	Parents (n = 30) T1			Teachers (n = 10) T1		
	df	*F*	*p*	df	*F*	*p*
Total difficulties	1,39	6.740	.013	1,35	0.410	n.s.
Behavioural subscales						
Multivariate Analysis	5,38	1.619	n.s.	5,34	2.011	n.s.
Univariate Analyses						
Emotional problems	1,42	1.332	n.s.	1,38	2.335	n.s.
Conduct problems	1,42	8.016	.007	1,38	4.782	.035
Hyperactive behaviour	1,42	2.402	n.s.	1,38	0.026	n.s.
Peer problems	1,42	0.001	n.s.	1,38	3.391	n.s.
Prosocial behaviour	1,42	0.263	n.s.	1,38	0.108	n.s.

Nineteen (57.6 %) of the treatment group children were living in intact homes, while 8 (24.2 %) lived with a single mother, and 4 (12.1 %) of the children had a stepfather. Two (6.1 %) of the children had foster parents. All of the participating mothers had finished comprehensive school, and 23 (69.7 %) of them had an intermediate level education, while 3 (9.1 %) had graduated from university. Twenty-six (78.8 %) of the children had siblings. The mean ± *SD* number of siblings was 1.4 ±1.5, the maximum number being 7. The smallest family comprised 2 family members, and the largest 9. Nineteen (54.6 %) of the mothers were working, 10 worked full-time and 5 part-time, with 4 working irregular hours. Of the 14 (41 %) full-time mothers, 9 were either on maternity leave or on extended maternity leave *. Five of the mothers were unemployed.

At the post treatment (T2) interviews, mothers were asked about other possible treatment their children had received during the half-year interval between the pre and post interviews. None of the children had participated in any treatment similar to that practised at the Family School during the six month time interval.

Nineteen of the 33 children had not received any kind of treatment at all, 10 had visited a logopedist, and three of the children had participated in occupational therapy. One of the children had received cognitive therapy and another horse-riding therapy. None of these therapeutic treatments were regarded as counter-indications for inclusion in the study.

None of the participants in the Family School interrupted the programme. All the parents included in the experiment group took part in the post interviews, and only one did not return the SDQ-questionnaire at T2. The permanence of the treatment impact at T3 was measured solely with the SDQ-questionnaire. A total of 61 % of the parents returned the 1-year follow-up questionnaire.

Instruments

In order to evaluate the effects of the Family School POP on parenting skills and child problem behaviour, two instruments were used. The first instrument was a Finnish version of the *Parental Accounts of Children's Symptoms* (PACS) (Taylor & Schachar, 1993) (cf. Appendices A and B). PACS is a semi-structured,

* In Finland, every mother has the right to a one-year long maternity leave, but it may be extended for two additional years.

systematic and standardised instrument constructed for the purpose of obtaining detailed information about children's behaviour in various everyday situations. It provides detailed information about children's emotional problems, inattention, hyperactivity, and oppositional/defiant behaviour. For each problem behaviour, both severity and frequency are rated (Heptinstall, 1993, p. 4). At the same time, it reveals the parent's mode of action as a response to the aforementioned behaviour. At the end of the interview, two overall coping ratings (mothers' and fathers' general coping skills) are generated based on the entire interview. PACS also compiles information about parental time spent with the children, the parent's warmth and criticism expressed towards the child, and the quality of the marriage. Furthermore, the PACS interview contains questions about demographic data such as socio-economic status, family size, and the child's early developmental history. The additional part is modified to fit Finnish conditions (Sandberg, Salmi, & Palomäki, 2000). PACS has been extensively utilised in both clinical and non-clinical samples. Studies of young children suggest that the PACS is particularly suited to assessing change in children's behaviour over time. It has a good inter-rater reliability and is effective in distinguishing different disorders. Its scores also correlate highly significantly with other commonly used behaviour screening instruments, such as the Behaviour Checklist (BCL; Richman, 1977) and the Child Behaviour Checklist (CBCL; Achenbach, 1991) (Gardner, Sonuga-Barke, & Sayal, 1999; Sonuga-Barke, Lamparelli, Stevenson, Thompson, & Henry, 1994; Wilson, Gardner, Burton, & Leung, 2006).

The data in this study is based on the mothers' estimations of their children's behavioural disorders, and the parents' mode of action in various everyday situations with the child. When asking parents about children's behaviour, a number of factors may contribute, skewing their perception of their children's behavioural problems' severity, such as the child's sex, or the parents' toleration of disobedience. In order to overcome or reduce such possible biases, the final ratings are based on the interviewer's judgements (cf. Heptinstall, 1993, p. 4).

In this study, parenting skills were measured on a 4-point scale (see Appendix B), ranging from 1 = doubtful/questionable parenting skills (parental actions are making the problems worse or adding new problems, problems get out of hand, or abusive actions), 2 = ineffective parenting skills (the parent is using ineffective strategies only, but the parents actions do not aggravate the problem, or lack of response to a problem), 3 = average parenting skills (problems are not avoided, but ineffective strategies have been replaced with more effective ones) to 4 = good parenting skills (problems are always or nearly always

anticipated and avoided, parents are acting according to a plan.) The variable parenting skills, measured separately for mothers and fathers, is a summed variable which is formed of the sum of the parents' general coping skills and ability to cope with the different behavioural difficulties (i.e. coping with EM, ADHD and ODD/CD problems). Parental agreement was also measured on a 4-point scale, ranging from 1 = severe disagreement, 2 = different behaviour towards the child, 3 = difference in opinions but not of style, to 4 = no disagreement in upbringing methods. It was formed in the same manner as the variable measuring parenting skills by summing the parents' general agreement and parental consistency when handling the child displaying EM, ADHD or ODD/CD related behaviour.

The assessments of mothers' expressed warmth and criticism towards the child were based on the interviewers' comprehension of the entire interview. The expressed warmth was measured on a 4-point scale which was recoded so that 3 = plenty of warmth and 0 = not at all or little. The criticism was measured on a 5-point scale with anchors of 0 = no critical expressions and 4 = plenty of critical expressions during the entire interview. The severity of the children's difficulties in the observed problem areas was measured on a 4-point scale ranging from 0 = no problems, 1 = mild problems, 2 = marked problems to 3 = severe problems (see Appendix A). The frequency of the behavioural problems was also measured on a 4-point scale with the range of 0 = never, 1 = 1-2 days a week, 2 = 3-6 days a week, 3 = daily (see Appendix A). A summed variable for the frequency of the ODD and the CD problems could be formed, but this was not possible for the emotional problems frequency, due to the fact that the reliability of this scale was not sufficiently high. The reliability (internal consistency) of the summed variables which were formed from PACS' individual items, was calculated with Cronbach's α and are presented in Table 6.

Table 6.

The Reliability (Internal Consistency) of the PACS Subscales, Analysed with Cronbach's α and the Inter-rater Reliability (r) between the Two Interviewers.

Scales	Scale reliability	Inter-rater reliability
Mother's parenting skills	.74	.84
Father's parenting skills	.85	.80
Parental agreement	.90	.89
Child's total difficulties	.69	
Child's EM problems	.60	.86
Child's ADHD problems	.77	.98
Child's ODD problems	.81	1.0
Child's CD problems	.81	.98
Frequency for ODD problems	.65	.99
Frequency for CD problems	.66	.99

The PACS subscales are consistent with the classification of DSM-IV (APA, 1994). Due to the fact that the number of participants in this study was relatively small, the scales were tested for skewness and kurtosis. The values were well within acceptable levels (skewness varied between 0.078 and 1.04, and kurtosis between 0.21 and 1.35), allowing the use of parametric testing.

The interview was conducted with the experiment and the control group both before (T1) and after (T2) treatment, with a six-month interval, in a pre-post design. To avoid subjective impacts, the interviews were conducted crosswise between two interviewers, so that the same interviewer never conducted both the pre- and the interview. For this reason the inter-rater reliability had to be examined. The results are presented in Table 6.

The second instrument was a Finnish version of the *Strengths and Difficulties Questionnaire* (SDQ) (Goodman, 1999). SDQ is a brief behavioural screening questionnaire that provides data on children's and teenagers' behaviour, emotional life and human relations. The questionnaire also includes an impact supplement enquiring about the distress, social difficulties, concern and chronicity of the child's problems. Almost identical versions are completed by parents or teachers. In his studies, Goodman (1994, 1997, 1999) has found that SDQ is a sensitive and specific instrument with good test-retest reliability, and that it

correlates well with earlier widely used similar instruments, such as Rutter's questionnaires (Goodman, 1997) and Achenbach's Child Behaviour Checklist (CBCL) (Goodman & Scott, 1999). SDQ is well-suited for children with normal intelligence, and it has been considered as easy to complete and attractive, due to the fact that it focuses on strengths as well as on weaknesses. The SDQ questionnaire has previously been used in Finland by Koskelainen, Sourander and Kaljonen (2000) in a study with school-aged children and adolescents (n = 735).They found SDQ to be a promising screening instrument for both epidemiological and clinical research. In the present study, the treatment effects were measured with the SDQ questionnaire at three time points: before (T1), half a year after the start of (T2), and one year after (T3) the Family School programme.

In the statistical analysis, the 25 SDQ items were divided into the 5 subscales suggested by Goodman (1994, 1997), each consisting of 5 items: (1) the hyperactivity scale (ADHD problems), (2) the emotional symptoms scale (EM problems), (3) the conduct problem scale (CD problems), (4) the peer problem scale, and (5) the prosocial scale (see Appendix C for a description of the items belonging to each scale)**.** In the present study, the subscale sums are divided by the amount of responded items per subscale, due to the fact that some respondents left some items unanswered (however, never more than two). The subscale values may vary between 0 and 2. A summed variable labelled "Total difficulties score" was constructed as an addition of the scores of the first four (1-4) subscales (excluding the prosocial scale). As a consequence of this, the maximum value of the total difficulties score is 8. Data at T2 were obtained from 32 parents and 29 teachers, and 20 parents and 16 teachers returned the SDQ questionnaire at T3.

The internal consistency of the SDQ scores for the different subscales in both parent and teacher reports at the baseline (T1) and after the Family School (T2) were analysed with Cronbach' α (Table 7).

Table 7.

The Reliability of the Parent and Teacher Reported Strengths and Difficulties (SDQ) Subscales at T1 and T2, Analysed with Cronbach's α.

	Parents		Teachers	
Scales	T1	T2	T1	T2
ADHD behaviour	.67	.59	.78	.75
EM problems	.71	.64	.70	.75
CD problems	.74	.70	.80	.77
Peer problems	.58	.73	.62	.72
Prosocial scale	.62	.58	.77	.72

As raters, the teachers showed slightly better internal consistency in their estimation of the children's strengths and difficulties. Although the reliability of the parent scales was not as good as that of the teachers, all parent subscales were still used in the analyses.

A validation of the instruments

The fact that both instruments used in this study (the PACS interview and the SDQ questionnaire) included subscales measuring the children's problems with emotions, conduct problems, and attention problems, made it possible to examine how consistent the parent's evaluations of the children's problem behaviour were, as a kind of test of validity of the instruments. The experiment and the control group were in this case combined into one sample. In order to make the investigator-based interview scores (PACS) and the questionnaire ratings (SDQ) comparable, *z*-scores were calculated for the different subscales. If variables are measured with scales of different ranges, such as using a 3-point scale (the SDQ questionnaire), and a 4-point scale (the PACS interview), a *z*-score transformation makes direct comparisons possible. A *z*-score transformation implies that variables within a sample are transformed so that the mean becomes 0, and the standard deviation ±1.

The multivariate analysis showed a high consistency between the results obtained with these two measurement instruments at both T1 and T2. According to the results, parents estimated their children's behavioural difficulties in the same way regardless of the instrument. The results are presented in Table 8. As Table 8 indicates, the two instruments correlated strongly with each other, and the multivariate analysis of variance revealed that the variance between

the two instruments was practically non-existent. A high consistency between the two instruments may be regarded as a measure of validity of the methods.

Table 8.

The Correspondence between some PACS and SDQ Subscales at T1 and T2, Measured with Both a Within-Subjects MANOVA and Pearson's Correlations.

z-scores	*df*	*F*	*p*	*r*	*p*
Multivariate analysis					
T1 (n = 43)	3,40	0.82	.970		
T2 (n = 40)	3,37				
	0.162	.921			
Univariate Analyses of Subscores					
ADHD behaviour					
T1	1,42	0.001	.979	.31	.05
T2	1,39	0.234	.631	.25	n.s.
EM problems					
T1	1,42	0.208	.651	.47	.002
T2	1,39	0.140	.711	.46	.003
CD problems					
T1	1,42	0.046	.831	.49	.001
T2	1,39	0.285	.596	.55	.000

PACS = *Parental Accounts of Child Symptoms*; SDQ = *Strengths and Difficulties Questionnaire*

Data analysis

Due to the small sample size of the study, the scales of the PACS interview and the SDQ questionnaire were first tested for skewness and kurtosis in order to ensure that the use of parametric tests would be possible.

When analysing the possible perceived changes in parenting skills and child behaviour within the subjects and between the groups during the different time points, the general linear model (GLM) repeated measures multivariate analysis of variance (MANOVA) was used as the primary method of analysis. MANOVA is a statistical technique that can be used to simultaneously and accurately explore the relationship between several categorical independent variables and two or more metric dependent variables (Hair, Anderson, Tatham, & Black, 1995, pp. 14 and 265). MANOVA also enables the understanding of the extent and the character of difference between two or more groups for several metric variables (Hair et al., 1995, p. 40). The authors also stress that the use of separate univariate (ANOVAs or *t*-tests) can create problems when the researcher wants to maintain control the overall, or experimentwide, error rate. Especially when some degree of intercorrelation among the dependent variables is suspected, the aforementioned authors regard the MANOVA as an appropriate choice (Hair et al., 1995, p. 266). The need for the use of repeated measures analysis, also called a within-subjects design (Brace, Kemp,& Sneglar, 2003, p. 43), originates from the fact that the same respondents (mothers) have in this study provided several measures, such as e.g. test scores over time (T1 and T2) (Brace et al., 2003, p. 3; Hair et al., 1995, p. 274).

When analysing only one dependent variable (e.g. total difficulties scores for each child, as measured with SDQ) univariate analyses of variance (ANOVA) were performed. In order to examine differences between raters (parents and teachers) at one time point, paired samples *t*-tests were used. For the measurement of reliability of subscales, Cronbach's α was used.

Traditional statistical methods alone are no longer regarded sufficient to interpret statistical data. It is desirable to include complementary methods, such as effect size (ES) in order to ensure more accurate, comprehensive and reliable results (American Psychological Association, 2001, p. 25; Nummenmaa, 2005). The traditional statistical null hypothesis test can be complemented with Power analysis, by means of which the researcher can avoid making common errors typical for null hypothesis significance tests (NHST). Type I error

occurs when the null hypothesis is falsely rejected. Thus, a significant difference is indicated when none exists. In this case α = is typically set at .05. In contrast, Type II errors occur when the null hypothesis fails to be rejected by the researcher when in fact the null hypothesis is false in the population. In this case, no significant differences are statistically indicated from the data when a difference actually exists in the population (D'Amigo, Neilands, Zambarno, 2001). Studies with small samples are in particular at risk for making Type II errors (Metsämuuronen, 2005, p. 422). In order for a result to be regarded as significant in a small sample a considerably greater difference between the means of two groups is required than in large samples. Therefore the measure of effect size (ES) (*Cohen's d)*, commonly recommended in the literature, was also calculated in the present study in order to describe differences in means pertaining to parenting skills and child behaviour in regard to group differences and comparisons between different time points (Furr, 2004; Metsämuuronen, 2005, pp. 422, 427-228 and 467). For analyses of difference in means, the effect size threshold values are .20 = small, .50 = medium and .80 = large effect (Cohen, 1992).

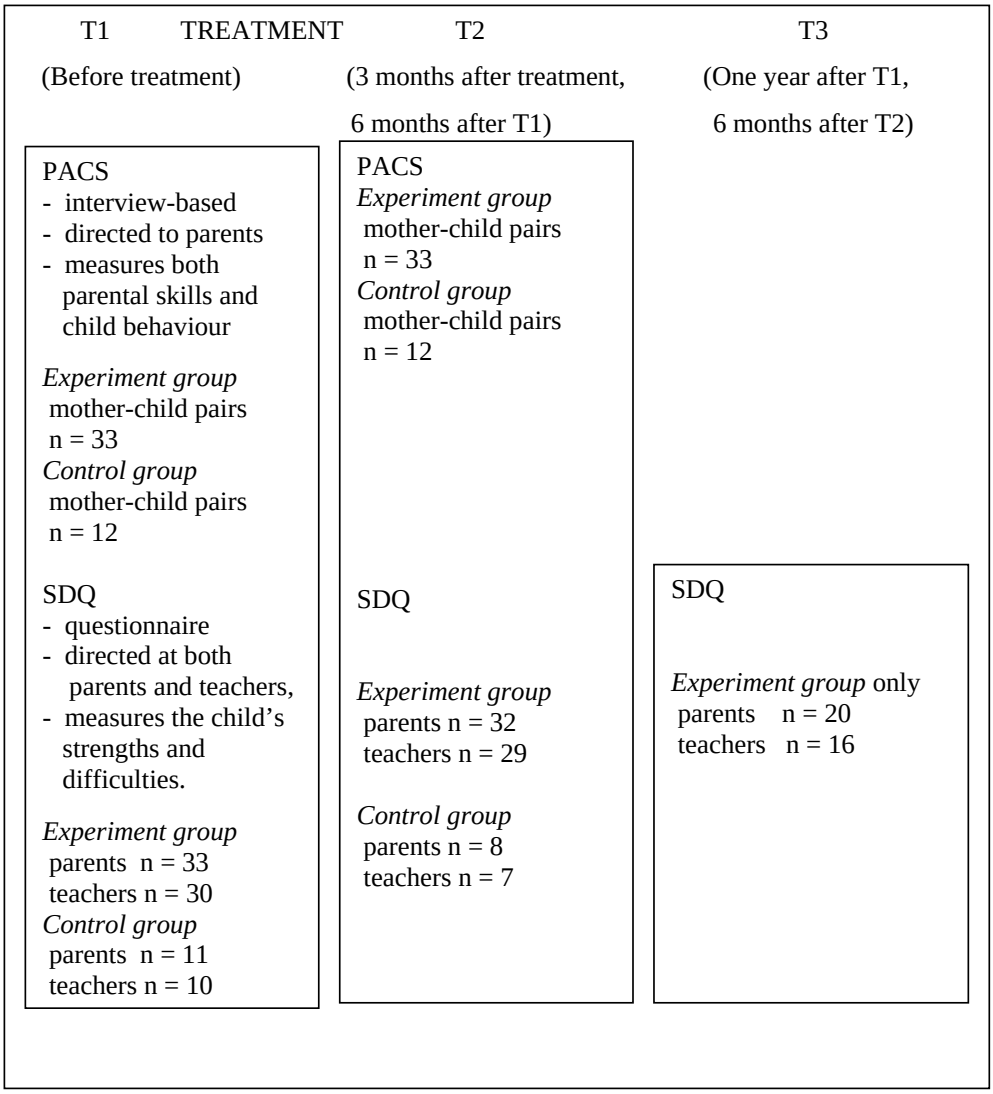
Table 9.

Summary of Instruments Used to Analyse the Effects of the Family School on Parenting Skills, Parental Agreement, Mother's Expressed Emotions, and Child Behaviour. For a More Detailed Description of the Instruments, see Appendices A-C.

Instrument	Measurement object	Variables
PACS	Mother's parenting skills Father's parenting skills	Mother's total parenting skills * 1) Mother's/father's coping with child's EM problems 2) Mother's/father's coping with child's ADHD behaviour 3) Mother's/father's coping with child's ODD behaviour 4) Mother's/father's general coping skills
	Mother's expressed emotions (EE)	1) Mother's expressed warmth 2) Mother's expressed criticism
	Parental agreement	Parental agreement * 1) Parental overall consistency 2) Parental consistency with EM problems 3) Parental consistency with ADHD behaviour 4) Parental consistency with ODD/CD behaviour
	Child behaviour	Child all-inclusive behaviour * 1) Child's EM problems 2) Child's ADHD problems 3) Child's ODD problems 4) Child's CD problems Child behavioural problems frequency 1) ODD problems frequency 2) CD problems frequency
SDQ	Child behaviour as estimated by parents and teachers	1) Total difficulties scale ** 2) Emotional problems 3) Conduct problems 4) Hyperactive behaviour 5) Peer problems 6) Prosocial behaviour

* = Summed variable of below-mentioned variables, ** = Summed variable of variables 2-5 below

Summary of the design



RESULTS

The effects of the Family School on parenting skills.

A comparison between mothers of the experiment and the control group

The multivariate analysis of a within-subjects MANOVA showed no statistically significant group differences between the experiment and the control groups in regard to the mothers' experiences of how their total parenting skills and coping strategies had changed between T1 and T2. The examination of the univariate test results with traditional significance testing revealed however, that the groups differed significantly from each other with respect to the mothers' experience of how they managed to handle everyday life situations with their children ("general coping skills"). Compared with the controls, the mothers who had participated in the training reported a clearly positive increase in their general coping skills, while the mothers of the control group reported only an insignificant decrease (cf. Figure 1). However, since the multivariate test did not reveal significant group differences, the univariate results should be treated with some caution. The results are presented in Table 10 and Figure 1.

As previously mentioned, the small sample size may hamper the acquisition of statistically significant differences in experimental studies. Due to this risk, effect size (ES) (Cohen's *d*) was also calculated for the variables measuring the mothers' experience of the change in their parenting skills. The ES analyses revealed a large effect size with respect to the difference between the groups in regard to the mothers' experience of their total parenting skills, general coping strategies, and in their assessment of how well they managed situations when their children were behaving oppositionally. A small effect was also found in regard to mothers' perception of the development of their coping skills concerning the inattentive hyperactive behaviour. According to the effect size analysis, the Family School did not have an impact on the mothers' experience of how well they handled their children's emotional problems. A negative *d* value signifies that the control group mothers reported a larger improvement in their coping strategies than the experiment group mothers did. The results of the ES analyses are also presented in Table 10 and Figure 1.

Table 10.

Results of Two Within-Subjects Analyses of Variance, one of Them a MANOVA, Comparing Mothers' of the Experiment (n = 33) and the Control Group (n = 12) Experience of Changes in Their Parenting Skills between T1 and T2, Measured with the PACS Interview.

	df	*F* time*group	*p*	*Cohen's d*
Mothers' total parenting skills	1,43	1.899	n.s.	1.04
Mother's coping with child behaviour problems				
Multivariate analysis	4,40	2.039	n.s.	0.51
Univariate analyses				
Mothers' general coping skills	1,43	4.985	.031	1.37
Mothers' coping with the children's EM problems	1,43	0.096	n.s.	-0.39
Mothers' coping with the children's ADHD problems	1,43	0.285	n.s.	0.22
Mothers' coping with the children's ODD/CD problems	1,43	2.949	.093	0.96

EM= *Emotional problems,* ADHD= *Attention-Deficit/Hyperactive Disorder,* ODD/CD= *Oppositional Defiant Disorder and Conduct Disorder combined.*

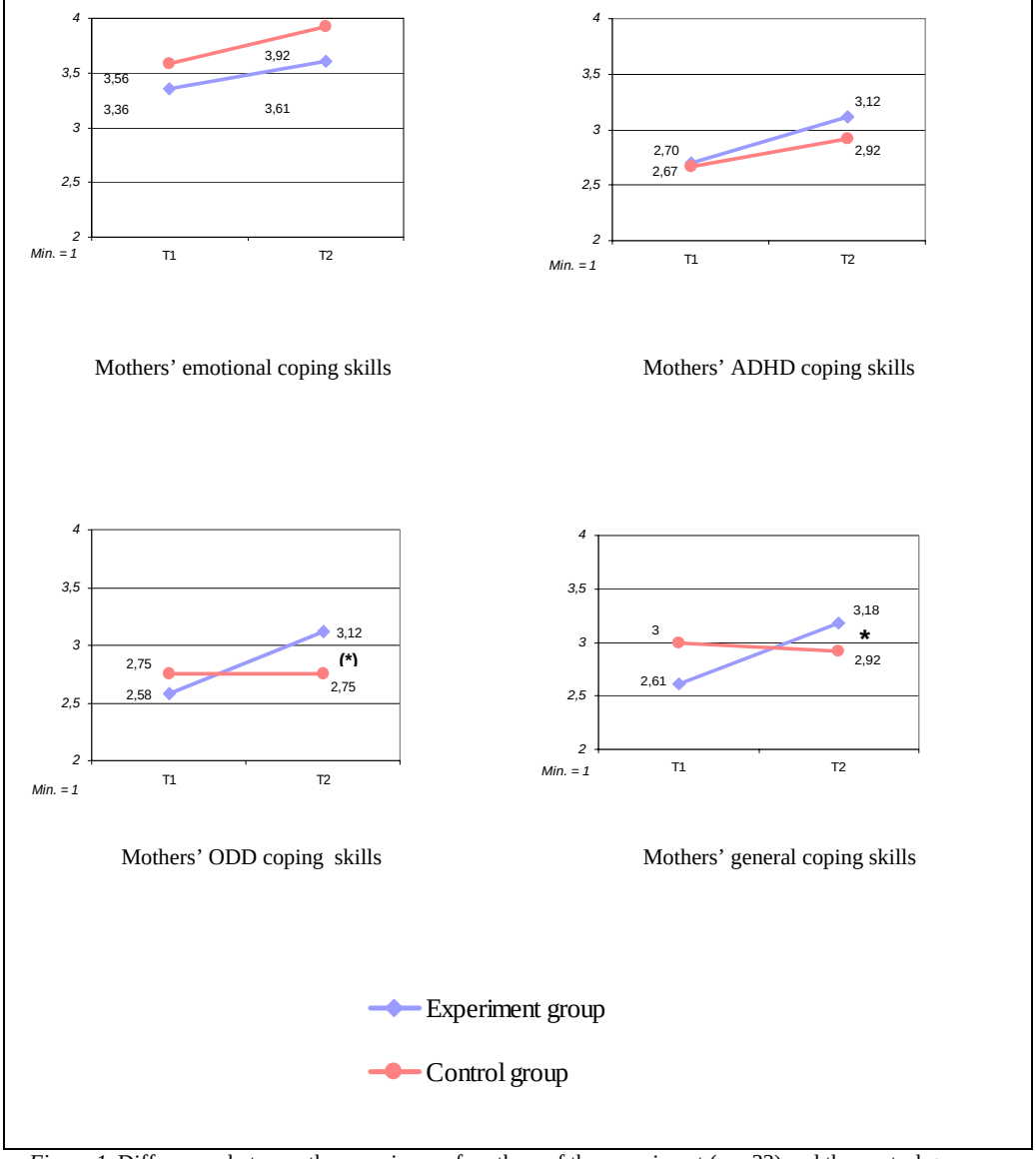


Figure 1. Differences between the experience of mothers of the experiment (n = 33) and the control groups (n = 12) in the estimation of their coping skills with their children's different behavioural problems, as measured with the PACS. (*= $p < .05$, (*) = $p < .10$).

The mothers and fathers of the experiment group reported somewhat poorer parenting skills and less parental agreement at baseline (T1) in comparison with parents of the control group. However, this group difference was not significant. Neither did the two groups differ significantly from each other when the progress of the fathers' parenting skills or parental agreement from T1 to T2 was analysed. The group differences are presented in Figure 2.

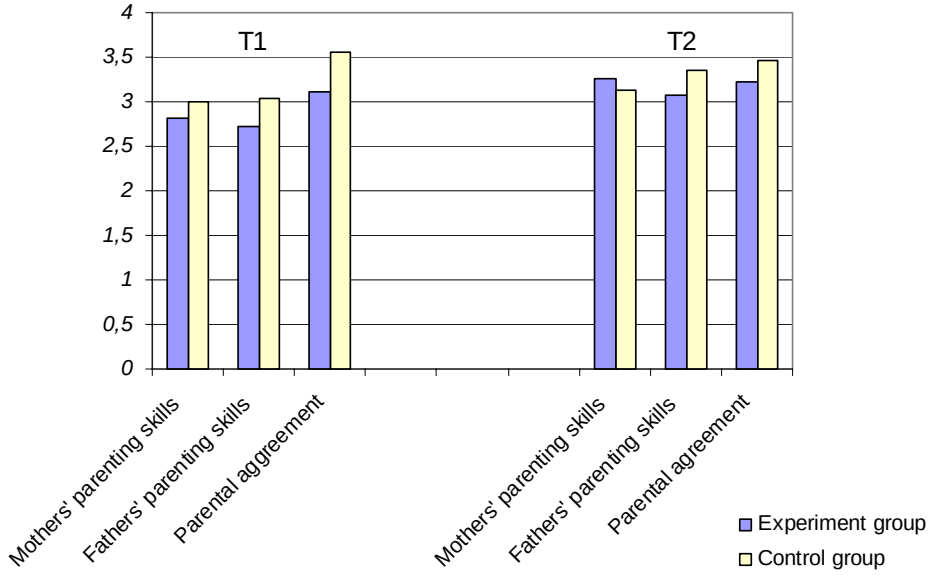


Figure 2. Differences in mothers' and fathers' parenting skills and parental agreement between the experiment and control groups at T1 and T2, measured with PACS. For exact means and *SD*s, see Appendices D and E.

Itemised accounts of the experiment group's parenting skills

Figure 3 presents the mothers' descriptions of the development of their own and their partners' total parenting skills, measured before and after participation in the Family School (More about the fathers' parenting skills, see p. 53). According to a within-subjects MANOVA (cf. Tables 11, p. 50 and 12, p. 54), the mothers of the experiment group reported a statistically significant improvement in their total parenting skills (cf. Table 11 and Fig.3). In particular, the mothers felt that they had become remarkably more skilled in their general management of daily life situations with their children. The mothers of the experiment group also felt that they had become considerably more skilled in coping with their children's specific behavioural problems. After the intervention, the mothers reported markedly

improved coping skills with their offspring's symptoms of ADHD and combined ODD/CD behaviour (Fig. 4). The results of the ES calculations were in line with those obtained with the traditional significant tests, although the effect size analyses also yielded a moderate improvement in the mothers' experience of their coping strategies with their children's emotional problems.

The effect of the Family School on the mothers' expressed emotions

As Table 11 reveals, the Family School intervention did not change the mothers' expressed emotions (EE), (i.e., warmth and criticism) towards the children. Neither did it have any significant effect on parental agreement, as calculated with the traditional statistical tests. However, the effect size analysis revealed a medium sized improvement in parental agreement, as reported by the mothers (Table 12, p. 54).

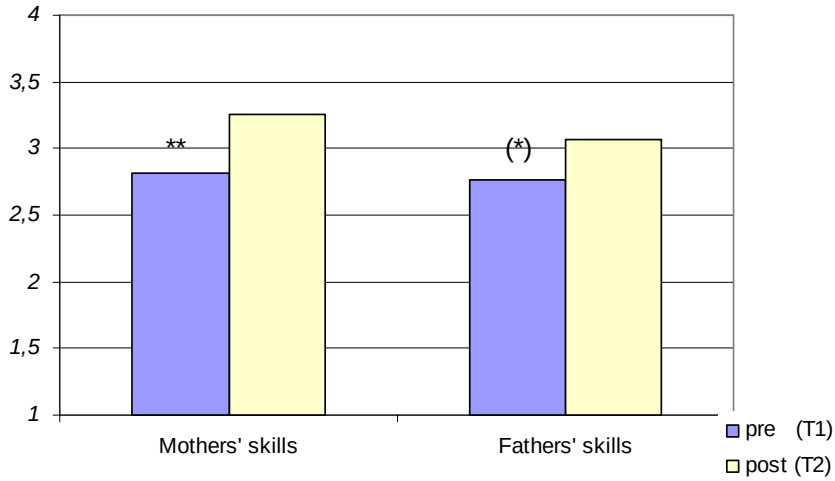


Figure 3. Mothers' and fathers' total parenting skills before and after the Family School, as reported by the mothers and measured with the PACS, on a 4-point scale ranging from 1 – 4. For exact means and *SD*s, see Appendix D. (** = $p < .01$, (*) $p = .057$).

Table 11.

Results of Two Within-Subjects MANOVAs, Measuring the Experiment Group Mothers' (n = 33) Parenting and Coping Skills before and after the Family School, Measured with PACS. See also Figs. 1 and 2.

Scales	*df*	*F*	*p*	*Cohen's d*
Mothers' parenting skills				
Multivariate Analysis	3,30	4.237	.013	0.75
Univariate Analyses				
Mothers' total parenting skills	1,32	11.740	.002	1.21
Mothers' expressed warmth	1,32	0.088	n.s.	n.e.
Mothers' expressed criticism	1,32	0.033	n.s	n.e.
Mother's coping with child behavioural problems				
Multivariate Analysis	4,29	3.010	.034	0.76
Univariate Analyses				
Mothers' general coping skills	1,32	12.475	.001	1.25
Mothers' coping with EM problems	1,32	2.212	n.s.	0.53
Mothers' coping with ADHD problems	1,32	6.773	.014	0.92
Mothers' coping with ODD/CD problems	1,32	10.410	.003	1.14

EM= *Emotional problems*, ADHD= *Attention-Deficit/Hyperactive Disorder*, ODD/CD= *Oppositional Defiant Disorder and* C*onduct Disorder combined*, n.e. = *no effect.* For exact means and *SD*s, see Appendix D.

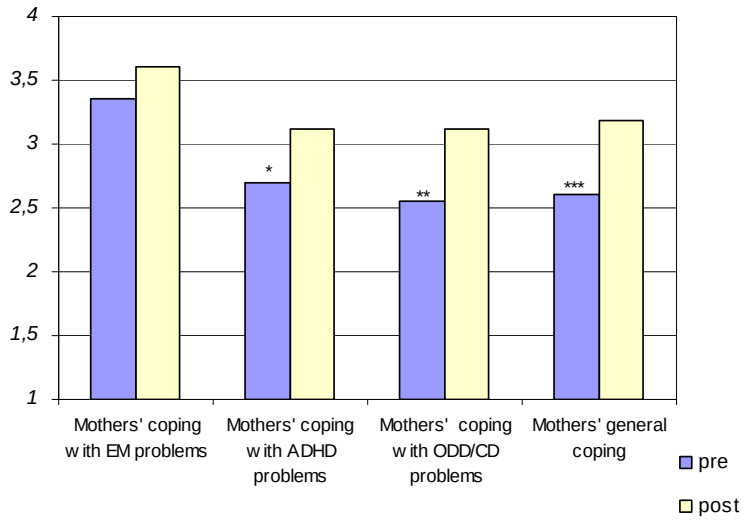


Figure 4. Mothers' (n = 33) ability to cope with their children's behavioural problems before and after the Family School, measured with the PACS. For exact means and *SD*s, see Appendix D. See also Table 11. (*** = $p \leq .001$, ** = $p < .01$, * = $p < .05$).

According to a combined between-subjects and within-subjects analysis of variance, mothers who perceived themselves to have lower parenting skills (< 3) at baseline (T1) felt that they improved their parenting skills more than mothers who felt they had better skills (≥ 3) prior to the programme [$F_{(1,31)} = 6, 85$, $p < .05$] (Fig. 5).

Parents who received a value under 3 with respect to their parenting skills usually used ineffective or doubtful ways to interfere with problem situations. They reported that they ignored the difficult situations totally, or that their way to intervene with the child's behaviour made the situation worse. According to a paired-samples *t*-test, the mothers with poorer parenting skills were of the opinion that they had improved their total parenting skills significantly between T1 and T2 ($t_{(1,19)} = 4,25$, $p < .001$, cf. Figure 5). The number of mothers with various levels of parenting skills before and after the Family School is presented in Figure 6.

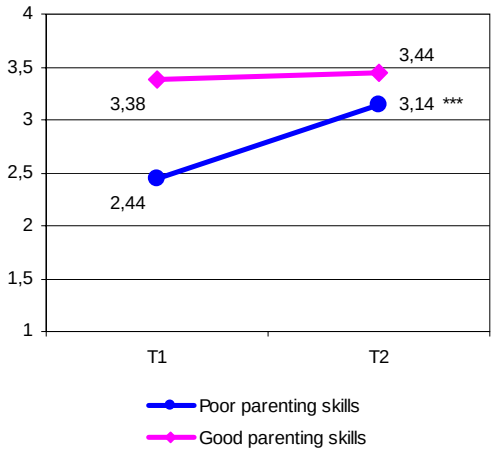


Figure 5. The improvement in maternal parenting skills between T1 and T2, in mothers with either poor (20) or good (13) parenting skills, measured with PACS. (*** = $p \leq .001$)

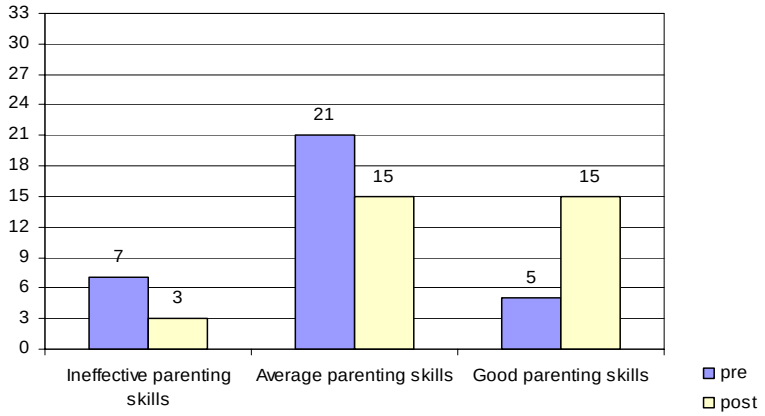


Figure 6. The number of mothers (n = 33) with ineffective, average, or good parenting skills before and after the Family School.

Effects on fathers' parenting skills and parental agreement. Comparison between the groups

The within-subjects analyses of variance measuring the fathers' total parenting skills, coping strategies with the children's specific behavioural problems, and parental agreement did not reveal any significant group differences during the half-year time interval. However, according to the effect size analyses, at T2 after the training, the parents were more united (*d* = 0.7) in upbringing practices, and the fathers managed the general everyday life situations better (*d* = 0.32) compared with the control group fathers (according to the assessment by the mothers).

Impact on the experiment group fathers' parenting skills and parental agreement

Since it was not possible to obtain data from the fathers of the experiment group to the same degree as from the mothers – many of the mothers were single parents – analyses of the fathers' parenting skills, coping strategies and parental agreement could not be analysed in the same MANOVA as the data from the mothers, since it would have reduced the number of cases (mothers) considerably; only mothers living in marital-like conditions would then have been included. Accordingly, the fathers' data were analysed in a separate MANOVA. The results are presented in Table 12.

As Fig. 3, (p. 49) and Table 12 reveal, the fathers, according to the mothers' statements, made a fairly significant improvement in their parenting skills between T1 and T2. The effect size analyses results differed considerably from the null hypothesis test results, by revealing a great improvement in the fathers' general coping strategies, total parenting skills, and coping strategies with the children's ADHD behavioural problems. A medium sized effect was also obtained in the fathers' coping strategies with the children's ODD/CD-related behavioural problems, and a small effect was observed in the fathers' coping strategies with their children's emotional problems. This is especially worth noting since the fathers did not participate in the training programme. In regard to parental agreement, the mothers of the experiment group reported a slight increase in parental consensus. However, this result was

not significant. On the other hand, the ES analysis revealed a medium effect size for parental agreement. The increased parental agreement correlated significantly with the fathers' parenting skills at T2 [r = .67, $p \leq .01$] (see Table 18, p. 69). It appears that if the reports of the mothers are reliable, the Family School improved the mothers' parenting skills directly and the paternal skills indirectly.

Table 12.

Results of Two Within-Subjects MANOVAs, Measuring the Experiment group Fathers' Parenting Skills, Paternal Coping and Parental Agreement based on PACS before and after the Family School (n=22). See also Fig. 3.

Scale	*df*	*F*	*p*	*Cohen' d*
Fathers' parenting skills				
Multivariate Analysis	2,20	2.712	.091	0.74
Univariate Analyses				
Fathers' total parenting skills	1,21	4.049	.057	0.88
Parental agreement	1,21	1.827	n.s.	0.59
Fathers' coping with child behavioural problems				
Multivariate Analysis	4,18	1.577	.223	0.59
Univariate Analyses				
Fathers' general coping skills	1,21	5.805	.025	1.05
Fathers' coping with EM problems	1,21	0.589	n.s.	0.33
Fathers' coping with ADHD problems	1,21	3.627	.071	0.83
Fathers' coping with ODD/CD problems	1,21	1.212	n.s.	0.66

EM = *Emotional problems*, ADHD= *Attention-Deficit/Hyperactive Disorder*, ODD/CD= *Oppositional Defiant Disorder*, and C*onduct Disorder combined*, n.e. = *no effect*. For exact means and *SD*s, see Appendix D

Treatment effect on the children's problem behaviour. A comparison between children of the experiment and control groups

In order to analyse whether the Family School intervention caused group differences in the mothers' experiences of the effects of the Family School on their children's challenging behaviour (data obtained with the PACS interview), a general linear model (GLM) repeated measures analyses of variance was used. Based on the traditional significance testing (*F*- and *p*-values), the analysis of the mothers' perceptions of the progress of their children's total behavioural problems revealed no significant difference between the groups during the half-year time interval. The multivariate analysis of the mothers' perception of the PACS subscales also revealed no significant difference between the children in the experiment and in the control groups.

However, the results of the effect size analyses differed considerably from those obtained with significance testing statistics. The groups differed from each other in total behaviour problems. The multivariate test of the PACS subscales showed a moderate effect size, but there was a large effect size with respect to the children's ODD-related behaviour. Moderate effect sizes were found in regard to ADHD symptoms and conduct disorders. The Family School also seemed to have a reducing effect on the children's oppositionally deviant behaviour frequency. The results are presented in Table 13. and Figure 10, p. 62.

The results of the ES analyses differed again considerably from those obtained with significance testing statistics. The effect size was especially large regarding the total behavioural problems analysed in a separate ANOVA. The multivariate test of the child behavioural problems frequency was not significant, and its effect size minimal (cf. Table 13).

Table 13.

Results of Three Combined Within- and Between-Subjects Analyses of Variance, Measuring the Difference between the Experiment Group (n = 33) and the Control Group (n= 12) Children's Behaviour before and after the Family School, Based on PACS.

Scales	*df*	*F time*group*	*p*	*Cohen's d*
Total behavioural problems	1,43	2.963	n.s	1.21
Behavioural subscales				
Multivariate analysis	4,40	1.133	n.s	0.38
Univariate Analyses				
EM problems	1,43	0.023	n.s.	n.e.
ADHD problems	1,43	0.399	n.s.	0.38
ODD problems	1,43	3.450	.07	0.82
CD problems	1,43	1.243	n.s.	0.26
Child behavioural problems frequency				
Multivariate analysis	2.42	0.494	n.s.	n.e.
Univariate Analyses				
Child's ODD problems frequency	1,43	0.925	n.s.	0.51
Child's CD problems frequency	1,43	0.035	n.s.	n.e.

EM= *Emotional problems*, ADHD= *Attention-Deficit/Hyperactive Disorder*, ODD= *Oppositional Defiant Disorder*, and CD= C*onduct Disorder*, *n.e. = no effect.*

The parents also rated the children's behaviour according to the SDQ questionnaire. An ANOVA, in which the experiment and the control group mothers' experiences of the progress of the children's total difficulties were compared, revealed no statistically significant difference between the groups during the half-year time interval. The multivariate significance test results of a MANOVA, analysing the SDQ's subscales, yielded results in line with the total difficulties scores, revealing no significant differences between the experiment and the control group children (Table 14).

Again, the effect size analyses revealed quite different results by indicating large effect sizes between the scores pertaining to the children's hyperactive behaviour, conduct and emotional problems, as rated by the parents. The ES analyses of the parents' estimations of their children's peer problems and prosocial behaviour revealed that the Family School did not manage to improve the children's social skills (negative effect size). The teachers also

completed the SDQ questionnaire at T1 and T2. According to traditional statistics, the teachers did not report significant group differences concerning the development of the children's total difficulties after the 6-month time interval. The ES index received a negative value, indicating a difference in means in favour of the control group. However, in contrast to the parents, the multivariate analysis of the teacher-reported SDQ subscales revealed a significant difference between the experiment and the control group (see Table 14). According to the teachers' estimations, the children of the experiment group decreased their hyperactive/inattentive behaviour almost significantly (see Fig. 7). The effect size analyses were in line with the significance testing. The multivariate test's ES index revealed a large effect size. The children of the experiment group decreased their hyperactivity, while the children in the control group showed an increase (large effect size). According to the teachers, the children of the control group reduced their problems with peers more than the children assigned to the experiment group did (large negative effect size). The ES index of the emotional problems scale achieved a negative value, indicating a larger decrease in emotional symptoms in the control group (See Table 14 and Figure 7).

Table 14.
Results from Four Between- and Within-Subjects Analyses of Variance Measuring the Group Differences between the Experiment (n = 29) and the Control Group (n = 7), Based on the SDQ Questionnaire, Ratings made by Parents (n = 40) and Teachers (n = 36) between T1 and T2.

	Parents				Teachers			
Scales	*df*	*F time*group*	*p*	*Cohen's d*	*df*	*F time*group*	*p*	*Cohen's d*
Total difficulties	1,38	1.904	n.s.	0.56	1,34	0.534	n.s.	-0.43
Behavioural subscales								
Multivariate Analysis	5,34	1.355	n.s.	0.50	5,30	3.140	.021	0.82
Univariate Analyses								
Emotional problems	1,38	1.057	n.s.	0.92	1,34	2.679	n.s.	-1.20
Conduct problems	1,38	2.968	.093	0.95	1,34	0.014	n.s.	n.e.
Hyperactivity problems	1,38	1.297	n.s.	1.56	1,34	3.255	.080	1.28
Peer problems	1,38	0.280	n.s.	-1.51	1,34	4.676	.038	-1.52
Prosocial behaviour	1,38	1.390	n.s.	-0.87	1,34	0.733	n.s.	n.e.

n.e. = *no effect*

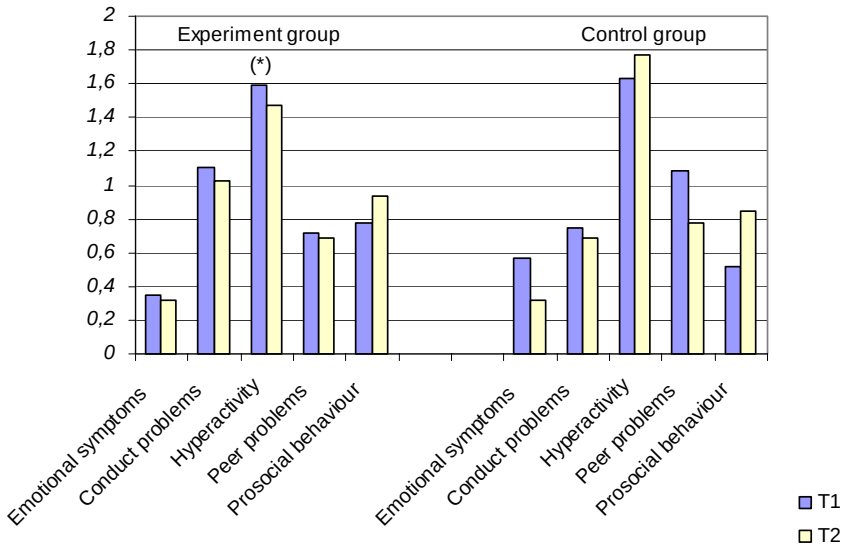


Figure 7. The teachers' ratings of the children's strengths and difficulties at T1 and T2 in both the experiment and control group, measured with SDQ. For exact means and *SD*s, see Appendix F.

Itemised accounts of changes in the experiment group children's behaviour

The mothers of the experiment group reported a significant decrease in their children's total scores for disturbing behaviour during the six-month time interval (see Figure 8 and Table 15). As presented in Table 15, the mothers of the experiment group felt that their children had reduced their ODD-related behaviour and conduct problems a great deal between T1 and T2, according to the PACS interview. In this case, the changes reported by the parents with the PACS interview were in line with the results obtained with the SDQ questionnaire (see also Table 17, p. 66 and Fig. 14, p. 66).

As a within-subjects MANOVA revealed (see Table 15 and Fig. 9), the mothers of the experiment group felt that their children had also reduced the *frequency* of their total behavioural problems significantly between T1 and T2; ODD-problems and CD-problems frequency decreased substantially during the half-year time interval. The effect size analyses results supported the findings obtained with the traditional significance tests by revealing a notable decrease in the children's ODD and CD problems severity and frequency.

Table 15.

Results of Three Within-Subjects Analyses of Variance, Measuring the Experiment Group Children's Behaviour before and after the Family School, Based on PACS (n = 33).

Scales	*df*	*F*	*p*	*Cohen's d*
Total behavioural problems	1,32	11.474	002	1.20
Behavioural subscales				
Multivariate Analysis	4,29	4.724	.005	0.81
Univariate Analyses				
EM problems	1,32	0.302	n.s.	n.e.
ADHD problems	1,32	0.304	n.s.	n.e.
ODD problems	1,32	14.671	.001	1.35
CD problems	1,32	8.101	.008	1.01
Child behavioural problems frequency				
Multivariate Analysis	2,31	6.948	.003	0.95
Univariate Analyses				
Child's ODD problems frequency	1,32	10.583	.003	1.15
Child's CD problems frequency	1,32	6.201	.018	0.88

EM= *Emotional problems*, ADHD= *Attention-Deficit/Hyperactive Disorder*, ODD= *Oppositional Defiant Disorder*, and CD = C*onduct Disorder*. n.e. = *no effect*

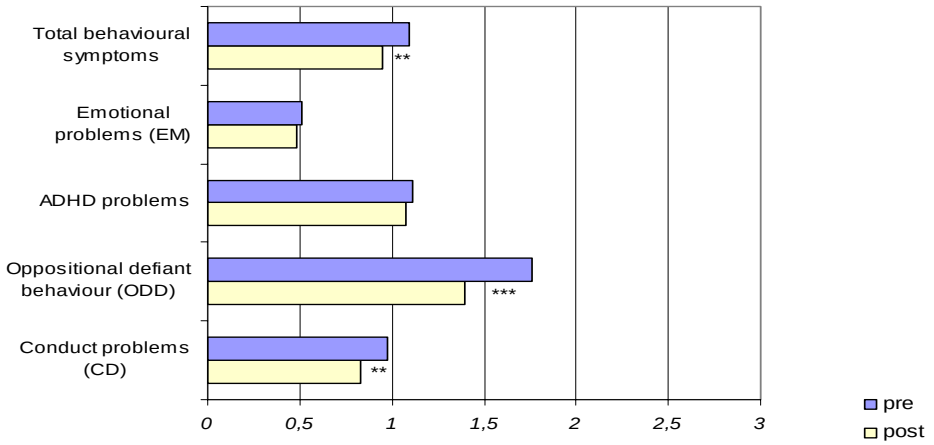


Figure 8. The severity of the experiment group children's behavioural problems before and after the Family School, according to PACS. For exact means and *SD*s, see Appendix D. See also Table 15. (** $p < .01$, *** $p \leq .001$)

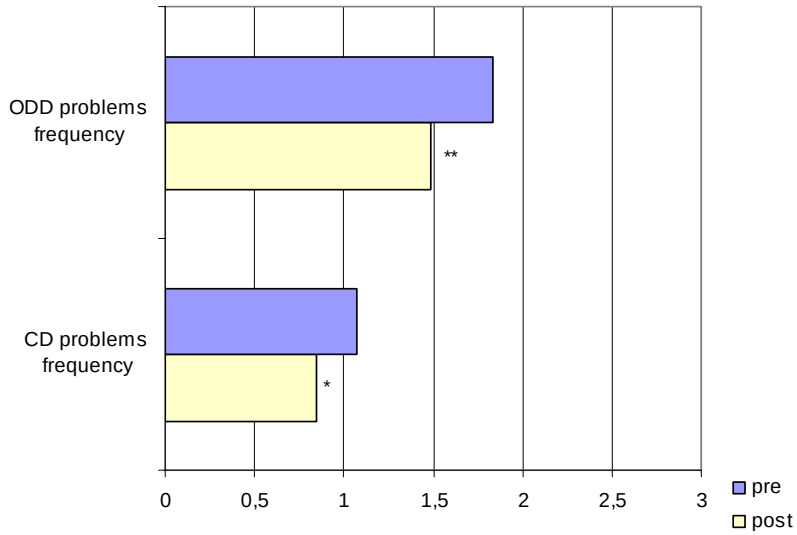


Figure 9. The frequency of the children's behavioural problems before and after the Family School, according to PACS. For exact means and *SD*s, see Appendix D. See also Table 15.
(* $p < .05$, ** $p < .01$)

As presented in Fig. 10, the mothers of the experiment group perceived their children to have more severe behavioural problems at T1 than the control group mothers did. However, according to a between-subjects MANOVA, the groups did not differ from each other significantly at baseline (T1) according to the multivariate test [$F_{(4,40)} = 1.93$, n.s.], but as it appears from Fig. 10 and the subsequent univariate analyses, there were significant differences between the groups prior to the intervention with respect to the mothers' perception of their children's oppositional behaviour (ODD-problems) [$F_{(1,43)} = 5{,}621$, $p < .05$] and conduct disorders (CD-problems) [$F_{(1,40)} = 4.947$, $p < .05$]. The between-subjects analysis of variance (ANOVA) also revealed a significant group difference between the experiment and the control group children's total behaviour problems [$F_{(1,43)} = 4{,}334$, $p < .05$] at baseline.

The mothers of the treatment group experienced their children to show more severe behavioural problems than the control group mothers did.

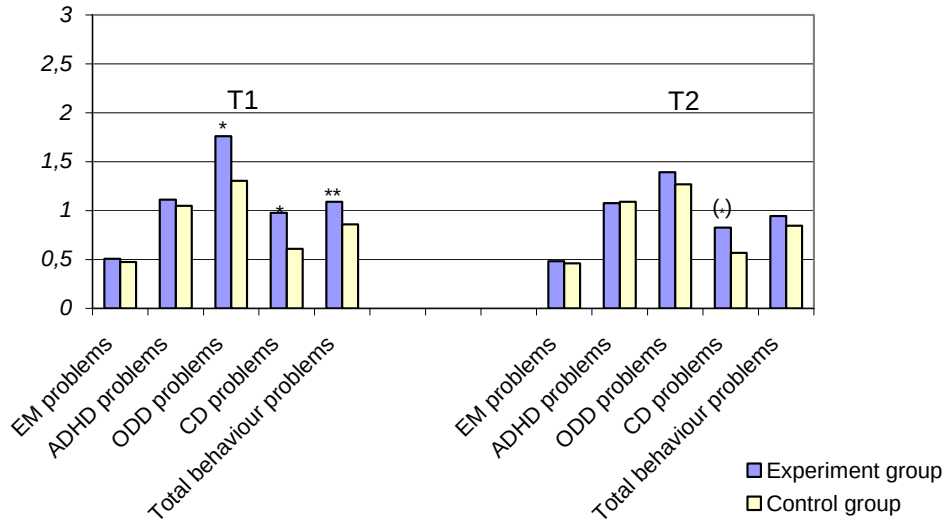


Figure 10. Differences in child problem behaviours between the experiment and control groups at T1 and T2, measured with PACS. For exact means and *SD*s, see Appendices D and E. (, * $p < .05$, ** $p < .01$)

As Figure 10 indicates, the discrepancy in the children's disturbing behaviour between the groups at T1 *had vanished* during the time interval, due to the improvement in total behavioural symptoms, ODD- and CD-behaviours of the children participating in the Family School. Only a tendency towards a difference between the two groups with regard to conduct disorders was found [$F_{(4,40)} = 3.15$, $p = .083$]. The groups had come close to each other during the half-year time period.

Parents and teachers as raters

When the parents' and teachers' assessments of the experiment group children's total difficulties scores measured with SDQ were compared with a paired-samples *t*-test, the difference between the raters was significant both at T1 ($t_{(1, 29)} = 3.272$, $p < .01$, $d = 0.60$) and T2 ($t_{(1, 30)} = 3.685$, $p \leq .001$, $d = 0.66$). The parents tended to rate the total difficulties scores for their children higher than the teachers did, at both times (see Fig. 12).

The differences between the parents' and teachers' ratings of the experiment group children's behavioural subscales, as measured with SDQ, at the baseline (T1) and follow-up

(T2) are presented in Table 16 and Figure 11. As the multivariate results reveal, there was a significant difference between how parents and teachers estimated the children's strengths and difficulties. Their opinions differed from each other especially with respect to conduct disorders, emotional problems, and prosocial behaviour. The parents rated their children as having more problems than the teachers did. Parents were also more inclined to see their children as prosocial. The difference between the parents' and teachers' ratings seemed to be stable over the half-year time interval, although the teachers' point of view of the children's prosocial behaviour is slightly more concomitant with that of the parents at T2. On the other hand, the difference in the parents' and teachers' assessments of the children's ADHD-related behaviour increased between T1 and T2; the teachers experienced a greater decrease in the children's inattentive hyperactive behaviour than the parents did. The effect size analyses also affirmed the difference between the raters in the two subscales (ADHD behaviour and peer problems) which failed to reach the level of significance. Otherwise, the ES analyses were in line with the results obtained with the traditional significance tests, verifying that teachers and parents rated the children's behaviour differently.

Table 16.

Results from Two Between-Subjects Analyses of Variance, Measuring the Difference between Parents' and Teachers' Ratings of Children's Strengths and Difficulties (SDQ) before and after the Family School (n = 30).

Scale	T1				T2			
				Cohen's				*Cohen's*
	df	*F*	*p*	*d*	*df*	*F*	*p*	*d*
Behavioural subscales								
Multivariate analysis	5,25	25.996	.000	2.04	5,26	14.299	.000	1.48
Univariate analyses								
ADHD behaviour	1,29	0.570	n.s.	0.28	1,30	3.034	n.s.	0.64
EM problems	1,29	4.492	.043	0.79	1,30	4.486	.043	0.77
CD problems	1,29	99.140	.000	3.70	1,30	50.394	.000	2.59
Peer problems	1,29	0.778	n.s.	0.33	1,30	0.512	n.s.	0.26
Prosocial scale	1,29	14.555	.001	1.42	1,30	5.211	.030	0.83

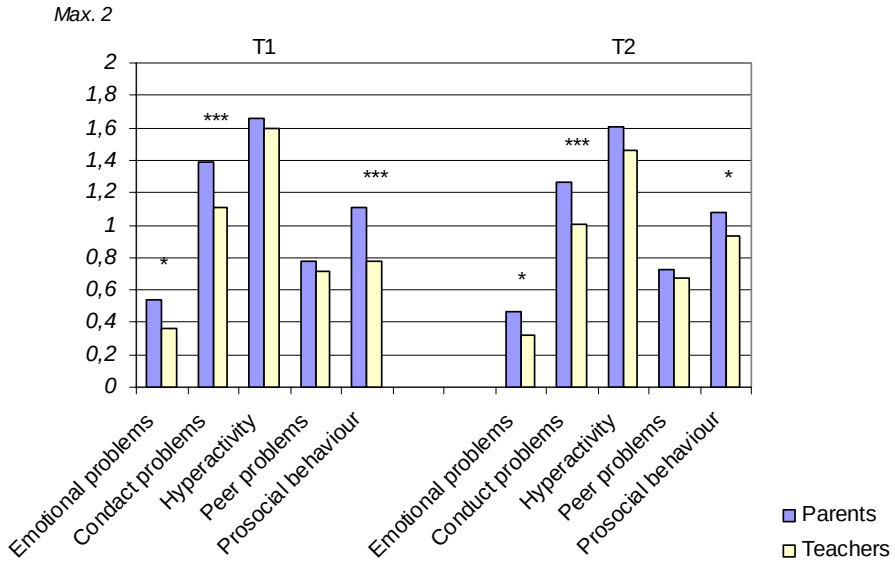


Figure 11. Difference in parents' and teachers' ratings of the experiment group children's strengths and difficulties at T1 and T2, measured with SDQ. For exact means and *SD*s, see Appendix F. See also Table 16. (* p <.05, ** p < .01, *** $p \leq .001$)

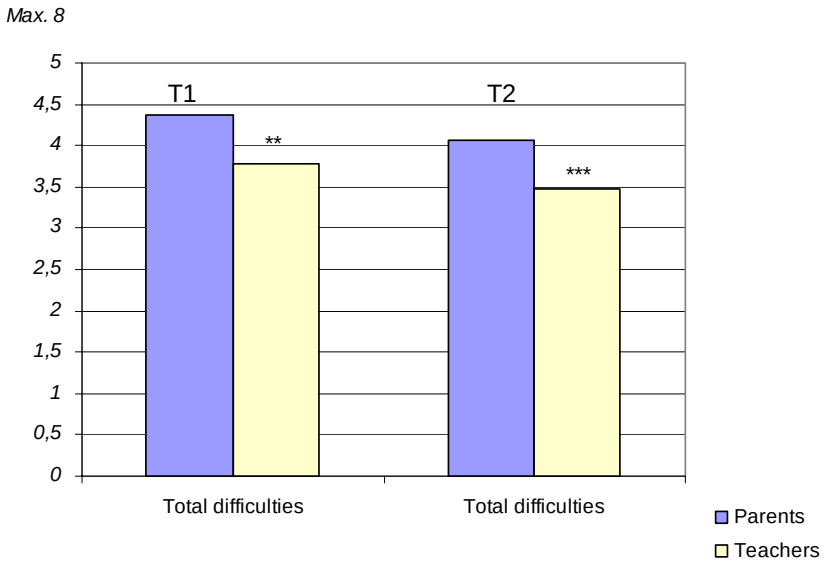


Figure 12. Difference in parents' and teachers' ratings of the experiment group children's total difficulties at T1 and T2, measured with SDQ. For exact means and *SD*s, see Appendix F.
(** p < 01, *** $p \leq .001$)

As shown in Figure 13, the mother's of the children of the experiment group experienced a significant decrease in the children's total difficulties. The teachers' perceptions were in line with those of the parents, but they barely failed to reach the level of significance. The effect size analyses affirmed this difference in the means of total difficulties between T1 and T2 to be moderate, as rated by both parents and teachers.

The multivariate analysis of the progress of the treated children's strengths and difficulties *subscales,* as rated by both parents and teachers, revealed no significant changes in the scores during the half-year interval (see Table 17). However, a closer examination of the results indicates that the mothers experienced a notable decrease in the children's conduct problems. The teachers observed an almost significant decrease in the treated children's hyperactive behaviour and a minor (p = .09) increase in their prosocial skills. The effect size analyses differed again somewhat from the results obtained with the traditional significance tests, by eliciting a large effect size in the treated children's conduct problems and mainly small effect sizes in the other behavioural scales, as rated by the parents. The teachers in turn had observed a medium sized reduction in the children's total difficulties, conduct problems and hyperactivity. The children had, according to the teachers, also increased their prosocial skills during the half-year time interval.

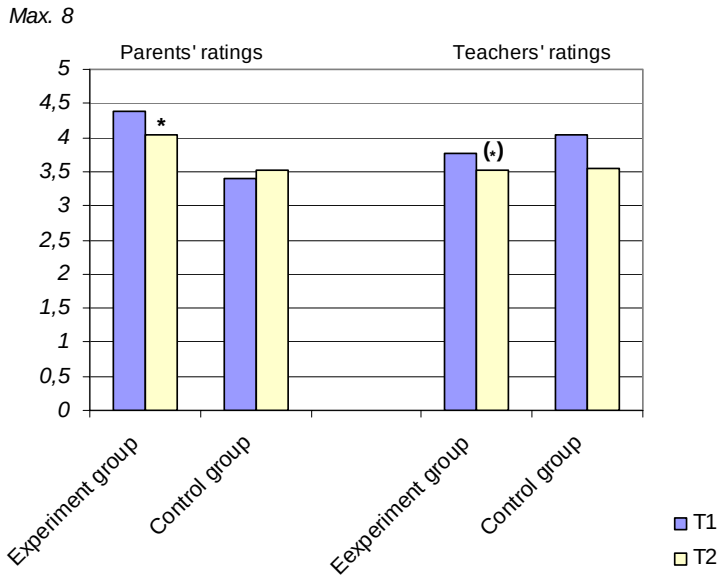


Figure 13. Parents' and teachers' ratings of the experiment and control group children's total difficulties at T1 and T2, measured with SDQ. For exact means and *SD*s, see Appendix F. ((•) p = .07, * p < .05)

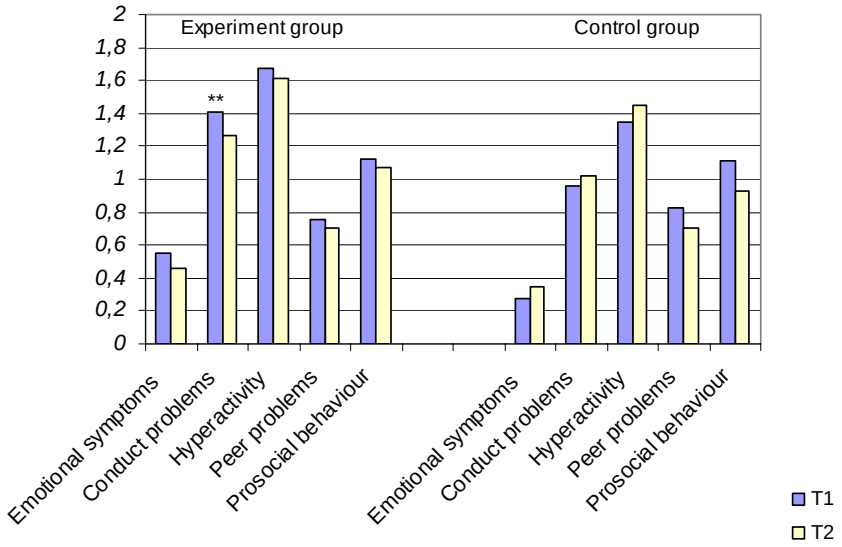


Figure 14. The parents' ratings of the experiment group and the control group children's strengths and difficulties at T1 and T2, measured with SDQ. See Appendix F for exact means and *SD*s. (** $p \leq .01$)

Table 17.

Results of Two Within-Subjects ANOVAs and Two Within-Subjects MANOVAs, Measuring the Experiment Group Children's Behaviour before and after the Family School, as Rated by Parents (n = 32) and Teachers (n = 29), Based on SDQ .

	Parents				Teachers			
Scales	*df*	*F*	*p*	*Cohen's d*	*df*	*F*	*p*	*Cohen's d*
Total difficulties	1,31	4,866	.035	0.79	1,28	3.533	.07	0.71
Behavioural subscales								
Multivariate analysis	5,27	1.603	n.s.	0.49	5,24	1,469	n.s.	0.49
Univariate analyses								
Emotional problems	1,31	1.416	n.s.	0.43	1,28	0.237	n.s.	n.e.
Conduct problems	1,31	7.485	.01	0.98	1,28	1.587	n.s.	0.48
Hyperactive problems	1,31	0.797	n.s.	0.32	1,28	3.821	.06	0.74
Peer problems	1,31	0.359	n.s.	0.22	1,28	0.524	n.s.	0.27
Prosocial behaviour	1,31	0.698	n.s.	0.30	1,28	3.091	.09	0.66

n.e. = no effect

The analysis of the items supplemented to the SDQ inquiring about perceived distress, social difficulties, concern, and chronicity of the children's problems by the parents revealed a significant decrease in the parents' ratings of whether the child's challenging behaviour was a disturbance for their family life [$F_{(2, 28)} = 6.64$, $p = .004$]. After the treatment, the parents did not experience their child's behaviour as equally disturbing as before the intervention. A total of 18.2 % of the parents considered their children's behavioural problems to have improved remarkably after the treatment, and 45.5 % of the parents reported a somewhat lesser improvement. The mothers also experienced that the Family School programme had helped them to manage the problems caused by their children's disruptive behaviour better. Furthermore, 32.3 % of the mothers informed that the intervention had helped them to a great extent, while 48.8 % felt that it had helped them to a fair extent. Moreover, 18.9 % of the parents said that the programme had helped them only to some extent.

Also the teachers tended to see the children's disruptive behaviour as less strenuous for themselves and for the day-care group [$F_{(1, 17)} = 4, 25$, $p = .055$]. This can be seen by the fact that 51.6 % of the teachers felt that the children's behavioural problems had improved, while 15.2 % of the teachers said that the children's behaviour had improved a lot. 33.3 % of the teachers felt that the treatment of the child had improved their personal working conditions quite a lot.

Comparison between children with or without a diagnosis

Since 42.4 % of the treatment group children had a clinically confirmed ADHD diagnosis while 45.5 % of them were completely without any kind of diagnosis, it was of interest to examine if this difference had an impact on the effects of the Family School. No significant difference in intervention effectiveness was found between these two subgroups.

A multivariate analysis of mothers' experiences of their children's behaviour, as measured with PACS, revealed a nearly significant difference between the mothers' way to perceive their children's behaviour in these two subgroups [$F_{(8,20)} = 2.42$, $p = .052$]. The subsequent univariate analyses of the mothers' statements regarding their children's behaviour revealed a significant difference in the mothers' perception of the severity of their children's ODD behaviour [$F_{(1,28)} = 9.57$, $p \leq .005$] and ODD problems frequency [$F_{(1,28)} =$

8.92, $p < .05$]. The mothers of the undiagnosed children reported more often severe and more frequent oppositional defiant behaviour both at T1 and at T2.

Correlations between parenting skills at T1 and T2 and other variables

Correlations between the mothers' and fathers' parenting skills and child behaviour at baseline (T1) and follow-up (T2), as well as possible influential family background factors, are presented in Table 18. Based on the correlation analyses, it is evident that parents living in marital-like conditions claimed to have similar parenting skills as their partners both at T1 and T2. Although the Family School did not change the mothers' expressed warmth or criticism towards their child significantly (Table 11, p. 50), it is evident from the correlations that the higher scores the mothers received for their parenting skills both at T1 and T2, the warmer and less critical they were towards their children. With respect to the fathers' parenting skills, as estimated by the mothers, the baseline scores correlated significantly with the fathers' follow-up scores [$r = .47$, $p = .05$].

The better parenting skills the mothers perceived themselves to have at T2, the less were the children's behavioural problems, ADHD-, and ODD-related behaviour after the treatment. In this study, the mothers' age, working conditions, or educational level did not relate to the mothers' perceptions of their parenting skills as a result of the treatment (see Table 18).

Table 18.
Pearson's Product Moment Correlations between Mothers' (n = 33) and Fathers' (n = 22) Parenting Skills, and a Number of Relevant Variables before (T1) and after (T2) the Family School.

		Mothers' parenting skills		Fathers' parenting skills		Parental agreement	
		T1	T2	T1	T2	T1	T2
Mothers' parenting skills at	T1	1.00	.22	.47*	.29	.29	.36
	T2	.22	1.00	.29	.52*	-.13	.21
" expressed warmth at	T1	.41*	.35*	-.30	.02	.02	.08
	T2	.17	.47**	-.02	-.53*	-.15	-.22
" expressed criticism at	T1	-.36*	-.35*	-.15	-.21	-.38	-.09
	T2	-.32	-.58***	-.28	-.56**	-.07	-.23
Fathers' parenting skills at	T1	.47*	.29	1.00	.47*	.20	.54**
	T2	.29	.52*	.47*	1.00	.38	.67***
Parental agreement at	T1	.29	-.13	.20	.38	1.00	.57**
	T2	.36	.21	.54*	.67***	.57**	1.00
Children's behavioural problems at	T1	-.31	-.20	-.42*	-.14	-.25	-.45*
	T2	-.31	-.55**	-.31	-.31	-.26	-.36
Frequency of behavioural problems at	T1	-.33	-.23	-.41*	-.27	-.29	-.47*
	T2	-.27	-.34	-.40	-.26	-.44*	-.40
Children's EM Problems at	T1	-.07	.18	-.14	-.31	-.34	-.35
	T2	-.05	-.26	-.25	-.17	-.04	-.07
Children's ADHD problems at	T1	-.18	-.32	-.23	.04	-.06	-.10
	T2	-.26	-.58**	-.05	-.05	-.03	-.06
Children's ODD problems at	T1	-.33	-.17	-.27	-.19	-.26	-.34
	T2	-.26	-.46**	-.19	-.46*	-.43*	-.41
Frequency of ODD problems at	T1	-.33	-.23	-.19	-.37	-.30	-.37
	T2	-.15	-.22	-.11	-.36	-.58*	-.47*
Children's CD problems at	T1	-.22	-.15	-.43*	.01	-.09	-.41
	T2	-.26	-.22	-.35	-.01	-.10	-.24
Frequency of CD problems at	T1	-.16	-.14	-.36	.18	-.10	-.15
	T2	-.29	-.04	-.32	.17	-.17	.03

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$
EM = *Emotional problems*, ADHD = *Attention-Deficit/Hyperactive Disorder*, ODD = *Oppositional Defiant Disorder*, and CD = *Conduct Disorder*

A comparison between the effects on children and parents

In order to analyse whether the Family School benefited the children or the parents more, the differences in the mothers' parenting skills and the children's behaviour between T1 and T2 were calculated. After this z-scores were calculated for these differences. This was done since the variables measuring the mothers' parenting skills and child behaviour were of different ranges, i.e. from 0-3 for child behaviour and 1-4 for parental skills and *z*-score transformations make direct comparisons between them possible. A *z*-score transformation implies that the variables are transformed so that the mean becomes 0 and the standard deviation ±1.

In this study, paired samples *t*-tests of the *z*-scores calculated on the gained values for discrepancy in the mothers' parenting skills and child behaviour (EM, ADHD, ODD and CD) between T1 and T2 showed no significant difference between the improvements made by the mothers and the children. That is, parents and children benefited from the programme to the same extent. Significant correlations appeared between the improvement in mothers' parenting skills and decreases in the children's total behavioural symptoms ($r = .39$, $p = .026$) and emotional problems ($r = .40$, $p = .020$). The reduction in the children's oppositional behaviour also correlated with an increase in the mothers' parenting skills between T1 and T2, but the correlation barely failed to reach significance ($r = .32$, $p = .073$).

Permanence of the treatment effects

Twenty-one of the parents and 17 of the teachers were interviewed according to the SDQ formula a year after the beginning of the Family School (T3), in order to discover whether the changes observed at T2 were permanent. A within-subjects MANOVA was used to analyse the differences between T1, T2 and T3. It should be noted that changes between T1 and T2 are presented in Table 17, p. 66, and Figures 13, p. 65 and 14, p. 66, based on the full sample. If analyses including T3 had been conducted in the same MANOVA, it would have reduced the number of parents from 32 to 21, and teachers from 29 to 17.

According to the parents, the children's total behavioural difficulties decreased significantly between T1 and T2 and the one-year follow-up (T3) [$F_{(2, 19)} = 4.670$, $p = .022$]. The teachers' ratings were consistent with those of the parents [$F_{(2,15)} = 8.048$, $p = .004$]. The

parents rated their children to have significantly more severe difficulties than did the teachers. The difference between the two types of raters was significant at all time points (cf. Fig. 15). As Figure 15 reveals, the children's total difficulties also continued to decrease after T2, although it was neither significant nor of equal size compared with the change appearing between T1 and T2.

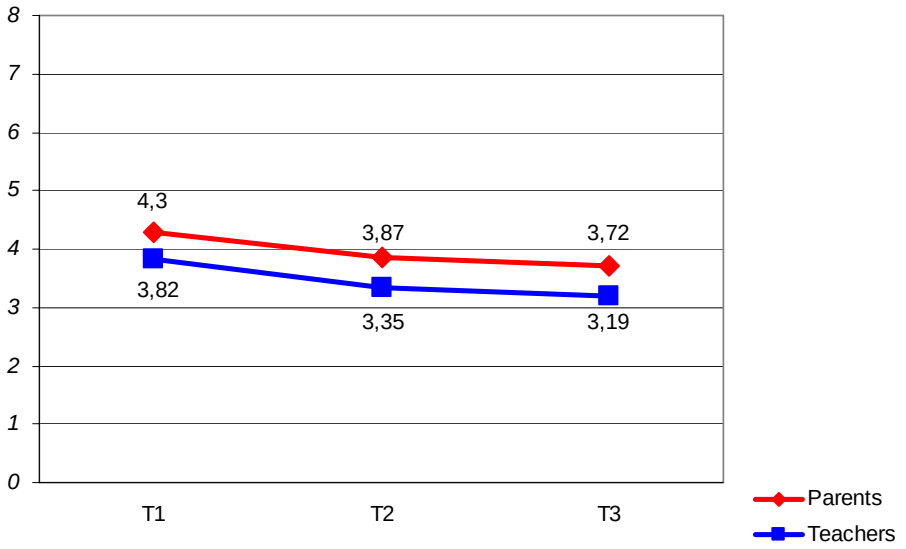


Figure 15. The progress of the treatment group children's total difficulties over a one-year interval. Before (T1) and after (T2) the Family School, and half a year later (T3), as rated by parents (n=21) and teachers (17). For *SD*s, see Appendix G.

Within-subjects analyses of variance were conducted with the SDQ subscale scores and total behavioural difficulties based on the parents' and teachers' evaluations at T1 and T3 only, as dependent variables. The analysis of the children's total behavioural difficulties revealed a significant decrease in the children's total difficulties, as rated by parents [$F_{(1, 20)}$ = 8.798, p = .008] and teachers [$F_{(1, 17)}$ = 10.893, p = .005]. The effect size analysis results were in line with those obtained with the traditional significance tests, by showing a large reduction of the total difficulties as rated by both parents and teachers. The multivariate analysis of the parents' ratings of the subscales indicate no significant changes in the children's strengths and difficulties between T1 and T3, only tendencies towards significant

differences on three subscales (EM, CD, and peer problems) were observed. The results of the ES analyses differed again somewhat from those obtained with the traditional significant tests, by revealing large sized decreases in the children's emotional, conduct and peer problems. The children also had, according to their mothers, become less hyperactive and increased their prosocial skills moderately during the one-year time interval (medium sized effects).

An examination of the comparable ratings made by teachers showed that their ratings differed from those of the parents (see Table 19). According to the teachers, the multivariate analysis revealed a significant improvement in the children's strengths and difficulties between T1 and T3. According to the univariate analyses, teachers rated a significant reduction in three of the behavioural subscales (i.e. ADHD, CD, and peer problems) and an almost significant increase in the children's prosocial behaviour during the one-year period. The results of the ES analyses were in line with the results of the traditional significance tests by revealing large sized improvements in all the other scales, besides the scale of emotional problems, in which the effect was of medium size. The results are presented in Table 19.

Table 19.

Results from Two Within-Subjects ANOVAs and Two Within-Subjects MANOVAs, Measuring the Difference between Children's Strengths and Difficulties, as Rated by Parents (n = 21) and Teachers (n = 17), between T1 and T3, in the Experiment Group.

Scales	Parents				Teachers			
	df	*F*	*p*	*Cohen's d*	*df*	*F*	*p*	*Cohen's d*
Total difficulties	1,20	8.798	.008	1.33	1, 16	10.893	.005	1.65
Multivariate analysis	5,15	1.852	n.s.	0.70	5,11	5.612	.008	1.43
Univariate analyses								
ADHD behaviour	1,19	1.576	n.s.	0.65	1,15	4.572	.049	1.10
EM problems	1,19	3.435	.079	0.96	1,15	0.746	n.s.	0.45
CD problems	1,19	3.307	.085	0.94	1,15	6.622	.021	1.33
Peer problems	1,19	3.664	.071	0.99	1,15	7.288	.016	1.39
Prosocial scale	1,19	1.274	n.s.	0.58	1,15	4.215	.058	1.06

Table 20.

Results from Two Within-Subjects ANOVAs and Two Within-Subjects MANOVAs, Measuring the Difference between Children's Strengths and Difficulties, as Rated by Parents (n= 20) and Teachers (n= 17) between T2 and T3, in the Experiment Group.

Scales	Parents				Teachers			
	df	*F*	*p*	*Cohen's d*	*df*	*F*	*p*	*Cohen's d*
Total difficulties	1,20	0.652	n.s.	0.36	1,17	1.312	n.s.	0.51
Multivariate analysis	5,15	1.601	n.s.	0.65	5,12	1.698	n.s.	0.75
Univariate analyses								
ADHD behaviour	1,19	0.071	n.s.	n.e.	1,16	0.634	n.s.	0.40
EM problems	1,19	1.062	n.s.	0.47	1,16	1.426	n.s.	0.60
CD problems	1,19	0.017	n.s.	n.e.	1,16	0.041	n.s.	n.e.
Peer problems	1,19	0.625	n.s.	0.36	1,16	6.997	.018	1.32
Prosocial scale	1,19	3.065	n.s.	0.80	1,16	0.674	n.s.	0.41

n.e. = *no effect*

As Figure 16 shows, almost all the changes noted by parents at the post interview (T2) had been maintained or even improved between T2 and T3. A minor increase appeared in the children's ADHD and CD-related behaviours during this 6-month period, but the increase was insignificant, and the scores at T3 did not come close to the assessments made by the parents at T1. According to them, the children's social competence had decreased slightly from T1 to T2, but between T2 and T3, the prosocial scale scores again turned to increase and exceeded the scores at T1.The scores of emotional problems and problems with peers had also decreased at T3.

As Figure 17 indicates, the teachers were of the opinion that the children's problems with concentration and hyperactivity continued to decrease during the one year period. The change was largest between T1 and T2. The reduction in conduct problems also occurred mainly between T1 and T2, but remained stable between T2 and T3. According to the teachers' ratings, the children's problems with peers had decreased significantly. The decline was especially notable between T2 and T3 (see Table 20). Furthermore, the children's social skills (the prosocial scale) developed in the desired direction during the one-year time interval. According to the teachers, the children's emotional problems decreased a little

between T1 and T2, albeit they turned towards an increase between T2 and T3; however, this increase was not significant.

The changes in the children's strengths and difficulties between T1 and T2, according to SDQ as rated by both parents and teachers, may be attributed to the Family School, since no such changes were observed in the children assigned to the control group (see Figures 13 and 14, pp. 65-66). The one-year follow-up (T3) results corroborate the fact that the improvements gained in the Family School were permanent.

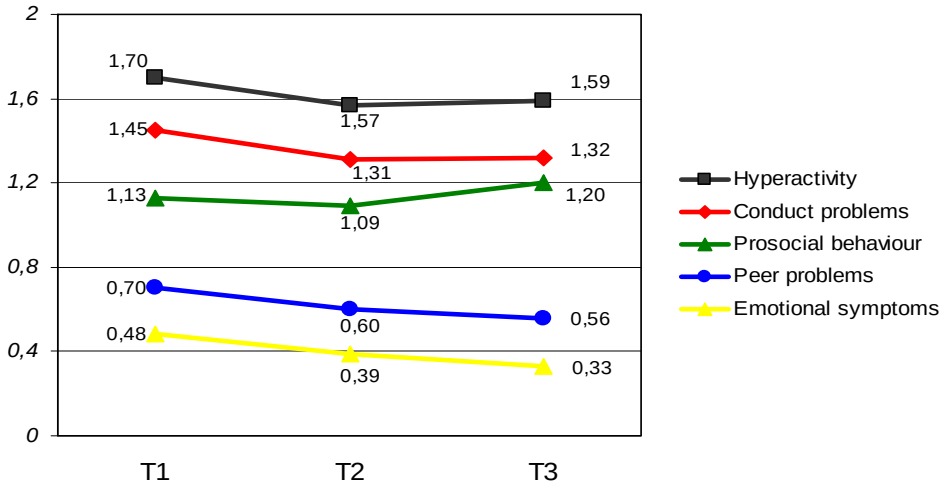


Figure 16. The progress of the treatment group children's SDQ subscale scores over a one-year period, before (T1) and after (T2) the Family School, and half a year later (T3), as rated by parents (n=20). For *SD*s, see Appendix G.

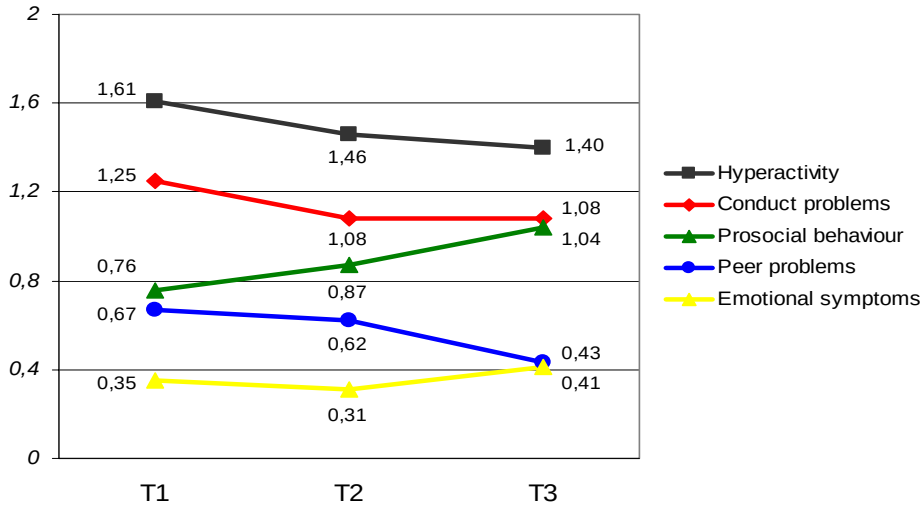


Figure 17. The progress of the treatment group children's SDQ subscale scores over a one-year period, before (T1) and after (T2) the Family School, and half year later (T3), as rated by teachers (n=16). For *SD*s, see Appendix G.

Summary of results

A comparison between the groups

According to the traditional significance tests, there were no statistically significant group differences in the mothers' perceptions of the development of their *total parenting skills* or *coping strategies* with the children's specific behavioural problems during the six-month period between T1 and T2. The effect size analyses differed considerably from those obtained with the traditional statistical null hypothesis test by revealing a large difference between the groups in the mothers' total parenting skills, and a moderate difference in general coping strategies in specific behavioural subscales.

The null hypothesis tests revealed a significant difference between the groups with respect to the mothers' experience of how they managed to handle everyday life situations with their children (*general coping skills*). The ES analysis confirmed this result. The participating mothers felt that they were better able to handle challenging everyday life situations with their children after the training.

There was also a tendency towards a group difference in the mothers' perception of how they handled the situations when their children were behaving disobediently or poorly (ODD/CD-behaviour). The ES analyses revealed this difference to be of a large size and also elicited a minor effect in the mothers' management methods with their children's inattentive/hyperactive behaviour. The mothers included in the experiment group reported that they were more able to manage the situations when their children were behaving oppositionally, poorly or inattentively/hyperactively.

The mothers with poor maternal parenting skills, prior to the training benefited more from the training programme than mothers with better skills did.

According to the mothers' statements, the fathers of the treated children increased their *parenting skills* almost significantly (two-tailed analysis). The effect size analyses suggested this improvement to be moderate. According to the traditional statistic tests, the improvement was notable in the fathers' general coping skills and barely failed to reach significance in coping with the children's ADHD related behaviour. The ES analyses supported these results, and further revealed smaller effects in the fathers' coping strategies with their children's emotional problems and ODD- related behaviour. The fathers did not participate in the training programme.

The multivariate analysis of the mothers' perceptions of the progress of *their children's specific behavioural problems subscales* did not reveal significant group differences, as measured with both instruments (PACS and SDQ). The analyses of the children's *behavioural problems frequencies* were in line with those of severity. The effect size analyses differed considerably from those obtained with significance testing statistics by revealing a large effect on the children's total behavioural problems and oppositional defiant behaviour. Minor effect size indexes were also obtained for ADHD, CD-problems severity and for ODD-problems frequency, as measured with PACS.

Summary of results cont.

The ES analyses of the SDQ-results were partly uniform with the above-mentioned PACS results. According to the ES analyses, the Family School did not have an effect on the children's peer problems, as rated by both parents and teachers.

According to the teachers' statements, the groups differed significantly from each other when the behavioural subscales were analysed. The effect size analysis confirmed this result. The traditional statistical analyses almost reached the level of significance when comparing the children's hyperactive behaviour. The ES analysis revealed this effect to be of a large size. According to the teachers, the children of the experiment group had decreased their hyperactive inattentive behaviour (SDQ).

The parents and the teachers rated the children's behaviour differently. The traditional statistical analyses revealed a significant difference between these two raters at all three time points. The ES analyses results were in line with those obtained with traditional statistical tests. The results revealed that the parents tend to be harsher when rating their children's behavioural difficulties, but more positive with respect to the children's prosocial skills.

The impact on the experiment group children

The experiment group mothers reported a decrease in their children's total behavioural difficulties. The reduction was especially notable in oppositional defiant behaviour, and also significant in conduct problems. The frequency of these two latter behavioural problems also decreased significantly after the training. The effect size analyses were in line with the statistical null hypothesis tests achieving large effect sizes for all other scales besides emotional and ADHD-problems.

The children included in the control group did not improve their behaviour to the same extent as the children in the experiment group, according to their mothers' or their teachers' statements.

According to the *one-year follow-up data* (T3), the changes in the children's behaviour were permanent. The largest changes occurred however between T1 and T2.

The one-year follow-up data revealed a significant decrease in the children's total behavioural difficulties as rated by both parents and teachers (large effect size). The multivariate ES analysis of the mother rated behavioural subscales results revealed a moderate effect size. According to the mothers, a large effect was obtained for the children's emotional, conduct and peer problems, whereas the teachers ratings revealed large effect sizes for the multivariate analysis, ADHD behaviour, conduct disorders and peer problems subscales. No control group data was available at T3.

DISCUSSION

The discussion will be structured in the following way: First, the impact of the Family School programme on parenting skills is presented. Second, results pertaining to child behaviour will be discussed. Before the final conclusions, the permanence of the treatment and the methodological issues will be discussed.

When the experiment and the control groups are compared, it becomes evident that the Family School had helped the mothers to manage the challenging every day life situations with their child better (i.e. their total parenting skills had improved and they possessed better general coping skills). After the intervention, the mothers also experienced that they were better able to handle their children when they were behaving disobediently or poorly. The mothers also found it easier to master the children's inattentive hyperactive behaviour. According to the results, the mothers also felt a slight decrease in their children's total behavioural problems, and the mothers especially noticed a reduction in ODD-related behaviour. The children assigned to the experiment group also had, according to both parents and teachers, decreased their inattentive hyperactive behaviour during the six-month time interval. The observed changes in the children's behaviour were permanent.

Parenting skills

The mothers participating in the programme significantly improved their parenting skills, according to their own assessments: After the training, the mothers regarded themselves to be more skilled at managing general everyday life situations with their child. These findings are in line with those made by Forgatch and DeGarmo (1999) and Pisterman et al. (1998). In particular, the mothers experienced an increase in their coping skills when their children were disobedient, showed hyperactive inattentive behaviour, or were disruptive. According to the ES analysis, the mothers who had participated in the Family School intervention also experienced that they were more able to manage the situations when their children were showing emotional problems after the training.

Mothers with poorer parenting skills (i.e. less adaptive coping styles, punitive modes of action, e.g. shouting or shaking by the hair) prior to the training increased their parenting skills more than mothers who had better skills already at T1. This finding replicates those of

Forgatch and DeGarmo (1999) and McKee, Harvey, Danforth, Ulaszek and Friedman (2004), who also found that mothers with poor maternal skills benefited more from parenting skills training programmes than mothers with good skills.

Unexpectedly, the results showed that the fathers also improved their total parenting skills (as reported by the mothers) almost significantly (p = .057). The increase in the fathers' parenting skills probably depends on their ameliorated general coping skills, which according to the results increased significantly. According to the mothers, the fathers also increased their skills in dealing with their children's ADHD behaviour. This however failed to reach a significant level (p = .071). The complementary effect size results also indicated improvements in the fathers' coping strategies with the children's combined ODD/CD behaviour and parental agreement. It should be noted that the fathers did not participate in the Family School programme. The estimated improvement in the father's parenting skills and the slight increase in parental agreement may be caused by the weekly homework given to the mothers. This assumption is based on the hypothesis expressed by Pisterman and her colleagues (1989), who found that parent homework assignments caused improvements in home settings.

The results indicate that the mother-father dyads of individual families possessed similar parenting skills and were highly consistent in upbringing practices. The findings may also be regarded as support for the idea that parents usually agree in upbringing questions, but they may of course still act differently in real life situations.

In contrast to the findings of the Conduct Problems Prevention Research Group (1999), and Webster-Stratton and Hammond (1997), the Family School did not notably increase the mothers' positive affections towards their children; only a slight positive change in expressed warmth towards the children by their mothers was observed after the treatment. Neither was there an equivalent reduction in the mothers' criticism towards their children. These outcomes are in contrast to Webster-Stratton's (1998), who found that after participation in a parenting programme, mothers used significantly fewer critical remarks towards their children.

When the results were analysed separately for both groups, it emerged that the parents assigned to the control group did not increase their parenting skills to the same extent as those of the treatment group. Therefore the changes reported by the mothers may be assumed, with some caution, to be caused by the Family School programme.

Child behaviour

The reliability of parents' reports of their children's behaviour has been questioned (Atkeson & Forehand, 1978). It is often claimed that the change in children's behaviour is only in the eyes of the viewer. It is also claimed that reports from informants making observations in only one environment, e.g. at home or in school settings, can be context-specific. In order to increase reliability and generalisability, multi-informant assessments should be favoured (Fisher & Fagot, 1996). In order to avoid the above-mentioned pitfalls, both the parents' and teachers' evaluations of the children's behaviour were included in this study. It should also be noted that the teachers did not receive any specific training; they were only informed by the parents that the child in question was participating in the Family School programme.

As previously mentioned, it is not possible to ascertain that all the changes in the children's behaviour at home and school can be distinctly attributed to the Family School programme. However, it is possible to point out that the intervention had positive decreasing effects on the children's total behavioural difficulties. The children decreased their conduct problems and the severity and frequency of their ODD-related behaviour. After the intervention, the children were also less hyperactive and showed less conduct problems, according to the mothers. The multivariate analysis of the teachers' ratings of the children's strengths and difficulties (SDQ behavioural subscales) revealed significant differences between the groups. From the teachers' ratings, it was evident that the intervention was able to slightly reduce the children's inattentive hyperactive behaviour in day care. These results also corroborate previous findings by Nadder et al. (2001) that parents and teachers are not always in agreement when rating children's behaviour. It has been suggested that teachers may be more accurate in their estimations of children's external behaviour and attention problems than parents (Merydith, 2001). Parents again may be more exact in rating their children's internal problems. From the results, it also becomes evident that the Family School programme was not able to improve the children's social skills; these findings are contrary to those made by Hemphill and Littlefield (2001).

According to the mothers, the children participating in the Family School programme showed significant improvement in their overall behaviour during the six-month time interval. After the training, the mothers experienced that their children were significantly less

oppositional, and showed a notable decrease in the severity and frequency of conduct disorders at home. These findings replicate those made by the Conduct Problems Prevention Research Group (1999), Danforth (1998) and Webster-Stratton and Hammond (1997). In line with the study by Pisterman et al. (1992b), the Family School programme achieved an insignificant decrease in the children's inattentive hyperactive behaviour in the home settings. It is suggested that the amelioration of attention/hyperactivity problems may be more appropriately taken care of during the school years, when attention problems begin to have a detrimental effect on academic success, social position, and classroom behaviour.

The teachers also reported changes in the treated children's all-inclusive behaviour, but they did not fully reach statistical significance. Likewise, the teachers reported a sizable but not fully significant decrease in the participating children's ADHD related behaviour.

After the training, the parent's felt that the children's challenging behaviour did not disturb the entire family life as remarkably as it had before. 63.7 % of the parents reported a visible change in a positive direction. The parents also estimated that they themselves were more skilled at managing the children's disturbing behaviour after the intervention. 32.3 % of the participating mothers felt that the treatment had helped them to manage challenging everyday life situations to a great extent, while 48.8 % of the mothers reported that it had helped them to a fair extent. It is pointed out in earlier studies that improvements in parenting skills reduce maternal stress and increase parental sense of competence (Danforth, 1998; Pisterman et al., 1992a). It may be assumed that the changes reported above may indirectly improve the quality of life in families having hard-to-manage children. If the statements made by parents are taken at face value, they may perhaps be regarded as expressions of programme satisfaction. Client contentment though was unfortunately not a part of this study. The teachers' reports were in this respect consistent with those of the parents. After the training, the child's interfering behaviour did not burden the teachers or other children in the day-care group as much as before.

Previous studies have shown that teachers tend to rate children's social competence and problem behaviour differently from the parents (Fisher & Fagot, 1996; Fagan & Fantuzzo, 1999). Also in this study, the parents and teachers perceived the children's behavioural difficulties and prosocial behaviour differently at all three time points. The parents tended to see their children as more problematic than the teachers did. These findings are congruent to those by Kolko and Kazdin (1993), who suggested that there may be "over-reporting" by parents. The difference in opinion was largest with respect to the children's conduct and emotional problems, albeit the aforementioned authors found in their study that the

correspondence between parent-teacher reports was higher in the ratings of the children's external and internal behavioural problems. The parents also rated their children to be socially more skilled than the teachers did.

The results of this study also support previous findings by Pisterman et al. (1989) and Webster-Stratton (1998): the better parenting skills the mothers experienced themselves as having after the training, the less behavioural problems they observed in their children. In this study, the increase in maternal skills was clearly related to diminished problems with attention and hyperactivity and to a reduction in child defiance. According to the results, the Family School programme seemed to benefit parents and children in similar ways. The children and the parents made equal improvements.

The results also revealed that there was a connection between the children's improved overall behaviour and a decrease in emotional problems. The smaller and less frequent the children's general behavioural problems were, the less the children displayed emotional problems.

As both teachers and parents (parents with both PACS and SDQ, and teachers with SDQ), reported an improvement in the children's overall behaviour, the change in child behaviour can be assumed to be real. Since neither parents nor teachers reported improvements of the same extent in the behaviour of the children belonging to the control group, the evident changes in the children's behaviour may, with a bit of caution, be attributed to the Family School.

Permanence of the treatment effects

The permanence of treatment effects was measured with the SDQ questionnaire one year after the beginning of the Family School programme (T3). At this time, the experiment group children's behaviour was estimated by both parents and teachers. The results showed that the positive changes in the children's behaviour were still distinguishable. This results are in line with previous findings according to which treatment effects of parent training programmes are permanent (Hemphill & Littlefield, 2001; Nixon et al., 2004; Strayhorn & Weidman 1991; Webster-Stratton & Hammond 1997).

It was also encouraging to find that the significant improvements in the children's total behavioural difficulties, as rated by both the parents and teachers at T2, had endured or even

developed further during the 6 months between T2 and T3. When examining the parents' and teachers' ratings of the separate subscales of SDQ, the participating children had decreased their problems with peers significantly according to the teachers. The parents noted a slight but not significant positive development in the children's prosocial skills during the time interval between T2 and T3. It appears that this increase in the children's social skills is dependent on maturation. A comparison of the subscales' means revealed that the development of the children's behaviour had commonly progressed for the better, especially as rated by teachers. Thus, the outcomes of the treatment seem to be permanent.

Methodological discussion

According to Robson, (2001, pp, 23-27) it is difficult to avoid assessment in this advanced society. He has pointed out that evaluation and assessment are closely connected. According to him, evaluation studies of high-quality always require a deliberate research design, and the correct analysis and interpretation of data. By applying scientific research rules, one can ensure the reliability of the conclusions made from the observations. Robson points out that the realisation of an evaluation study is a hard brand (Robson, 2001, p 97).
People are complicated by nature; intervention evaluations are usually many-faceted trials and people's problems can be severe and hard to change. Therefore, one should be prepared for minor or even nonexistent results (Robson, 2001, pp. 85 -87). According to Metsämuuronen (2005, p. 32) it is typical for a non-equivalent groups design that the subjects may differ from each other regarding several relevant factors. Subject heterogeneity or between-subjects variance may hamper the establishment of comparative homogenous groups; these circumstances may on their behalf stand as obstacles to the achievement of statistically significant results (Ahonniska-Assa, 2000, p.11).

The treatment effects were evaluated with a prior to training (T1) – post (T2) (3 months after finishing the programme) design. Parental Accounts of Child Symptoms (PACS) (Taylor & Schachar, 1993), a standardised investigator-based interview, was used at T1 and T2. A second instrument, Goodman's (1999) Strengths and Difficulties Questionnaire

(SDQ), was used in order to measure the development of the children's strengths and difficulties both at home and at day-care. One-year follow-up data (T3) was also obtained with SDQ.

Numerous studies indicate that parents are reliable estimators of young children's behavioural problems (e.g. Fisher & Fagot, 1996; Gadow & Nolan, 2002). According to Barkley (1990, pp. 234-236), parental interviews are indispensable when surveying child behaviour. Nixon et al. (2004) however stress that the utilisation of multiple informants and instruments can improve the validity of results. Few adults spend as much time with children as the teacher, therefore teachers are a natural choice for the evaluation of children's behavioural problems (Barkley, 1995, p. 120). Certainly, it is open for debate whether the instruments of this study were sensitive enough to measure changes in the parents' comprehension of their parenting skills and their children's behaviour, or whether an addition of observation of interactive play would have affected the results.

A general linear model (GLM) repeated measures analyses of variance (MANOVA) was used in order to analyse the treatment effects on parenting skills and child behavioural problems between the three time intervals. Multivariate statistical comparisons were also conducted between the experiment and the control group, and between the parents' and teachers' ratings.

MANOVA is commonly used in these kinds of studies, since it makes it possible to measure several dependent and independent variables simultaneously. MANOVA is also regarded as a robust and reliable method of analysis (Hair et al., 1995, p. 266).

When samples are small, it becomes especially difficult to detect small but real differences between means, therefore traditional significance tests are in such cases no longer considered sufficient. Researchers are mostly concerned that important existing effects will not be found (Type II error). The power of statistical tests can be defined as the probability of not making Type II errors. Therefore the effect sizes (ES) analyses are an indispensable part of psychological evaluation studies (Coolican, 2004, pp, 380-388).

Some limitations of this study should be mentioned. The first limitation is, as already mentioned, the sample size. Caution is necessary as far as generalisations are concerned. In group research designs, it may be difficult to achieve sufficient large homogenous groups (for a discussion of the relationship between sample size and generalisations, see e.g. Ahonniska-Assa, 2000, p.11). The second limitation is the difference in size between the experiment (33) and control (12) groups. As previously mentioned, it was harder than

expected to establish a control group of similar size made up of children referred for clinical investigation. Furthermore, one-year follow-up data was not obtained from the controls. Therefore, the effect of maturation concerning the experiment group's behaviour at T3 cannot totally be ruled out. Maturation is a typical problem that evaluation studies have to deal with.

Final conclusions

Bearing the aforementioned limitations in mind, the results of this study nevertheless do not falsify the conclusion that short-term group-based parent training programmes may have curative long lasting effects, not only for young children with challenging behaviour, but also for their parents. The parents experienced that they had increased their parenting skills, and the changes were maintained at a 12-month follow-up. The children's behavioural problems were reduced, and their prosocial skills were improved both at home and at day-care.

The study extends previous findings advocating the use of group-based interventions for children with behavioural problems. Problems with attention and executive functions are also typical targets for group-based interventions. A group is the child's natural operational environment where s/he can practise different kinds of skills, such as communication and social skills, and empathy (Nieminen, 1999, pp. 51-52).

In previous studies, it has been verified that by increasing parenting skills and reducing children's behavioural problems at an early age, it is possible to reduce the risk that the children's conduct problems develop e.g. into antisocial behaviours or substance abuse (Webster-Stratton, 1998; Webster-Stratton, 2000). By preventing problems from developing into levels where more expensive treatments are required, there are also economical gains (Nieminen, 1999, p. 57; Pölönen & Sitolahti, 1996, p. 5).

Group interventions have also been found highly motivating. In this study, not a single one of the participants left the programme. In parent groups, the parents have the possibility to learn useful management and discipline strategies from each other, and discuss experiences. This kind of exchange of experiences is valuable for parents (Niemelä, 1999, p. 57; Smucker & Hedayat, 2001).

In order to fully evaluate intervention programmes of this type, further studies are needed. Studies of hard-to-manage preschool aged children are still quite rare, and they have usually been retrospective (Kadesjö, et al., 2001). Therefore, there is a need for more comprehensive surveys, like long-term evaluations including adequate follow-up assessment. More accurate knowledge about treatment effects would enable us to tailor more effective interventions directed at more specific problem areas.

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Appendix A

The distribution of child behaviour attributes in the PACS subscales. Presented in this work with the kind permission of Eric Taylor.

Emotional Symptoms Scale (EM problems)

(1) Is X usually a miserable child or does s/he sometimes get miserable?
(2) Does X worry about things – e.g. what will happen at school, reactions of other people, becoming ill?
(3) Is X frightened of animals, insects, snakes
(4) " objects that can cause injury (e.g. cars, knives, scissors)
(5) " dirt, germs, contamination
(6) " being away from home or attachment figures
(7) " strangers, new situations
(8) " the dark, going to bed
(9) " school
(10) " social situations (travel, shops, swimming pool etc)
(11) " other (give details)
(12) How severe was the worst of these fears over the past years?
(13) Does X eat well? Do you think s/he eats too much or not enough? Is s/he too thin or overweight?
(14) What about sleeping? Does X sleep well? Does s/he have any difficulty going to sleep, nightmares, sleepwalking?

Hyperactivity Scale (ADHD behaviour)

(1) Can you think of a time in the past week or recently when X was watching TV or a video? How long did s/he watch for?
(2) When you last saw X watching TV, did s/he stay in one place or get up and move around the room. How often did X get up from the watching position?
(3) The last time you saw X watching TV did s/he fidget, e.g. swing their legs, tap their finger, fiddle with an object or clothing?
(4) Can you think of a time in the past week or recently when X was reading a book, magazine or comic? How long did s/he read for on that occasion? Is that the usual amount of time s/he would sit and read for?
(5) When you last saw X reading did s/he stay in one place or move around the room? How often did X do this?
(6) The last time you saw X reading did s/he fidget?
(7) Can you think of a time in the past week or recently when X was playing alone, e.g. drawing, painting, building models, doing needlework? How long did s/he spend doing this? Is that typical of the amount of time s/he would do something on their own for?
(8) During this task, did X stay in one place or get up and move around? How often did s/he do that?
(9) Did X fidget while doing this task?
(10) Can you think of a time recently or in the past week when X was doing things with other children, perhaps friends or brothers or sisters? What were they doing? On that occasion, how long did they play for? Is that typical of the amount of time X would spend doing things with other children?
(11) On that occasion was X running around unnecessarily, e.g. in and out of rooms, or clambering over furniture? If so, how often? Is that what usually happens when s/he is playing with other children?
(12) Can you think of a time in the past week or recently when X was sitting eating a meal? Did s/he get up and down from the seat at all?
(13) Can you think of an occasion recently when X has gone shopping with you? Did s/he stay with you or run away from you?
(14) Has X recently been with you on a family outing or to visit relatives? On this occasion did s/he run around excessively or climb on things?
(15) Can you think of a time recently when X was given a structured task to do at home? This could be something like laying the table or tidying or washing up. What exactly was s/he expected to do? Was this the usual way that s/he would go about things?
(16) Did X make mistakes during the task?
(17) Did X listen to your instructions and understand what you told him/her to do?
(18) How well did X follow the instructions?

(19) Did X complete the task?
(20) Was X easily distracted from the task, e.g. by noises from the street, background conversations or by other people coming into the room?
(21) Now can you think of a time recently when X had to do something which needed organisation? Something like having to get paper and pencils together for homework or drawing or getting cleaning materials together for a household task? On occasions like this, how well does X organise?
(22) Does X usually lose things?
(23) Has there been an occasion recently when X has forgotten things e.g. people's names or his/her lunch, or football, swimming or gym kit? Does this happen often?
(24) Have there been times recently when X has needed to wait in a game where players take turns? What happens then?
(25) Can you think of a time recently when you have asked X a question, e.g. about his/her day at school or in a quiz? Does X wait until you have finished asking before answering? Is this typical of what happens when you ask a question?

Oppositional Defiant Behaviour Scale (ODD problems)

(1) Does X ever get cross or lose his/her temper?
(2) Does X argue with you or answer you back?
(3) When you ask X to do something, for example put away toys, tidy the room or lay the table, will s/he normally do it? (disobedience)
(4) Does X ever argue with you, teachers or other adults?
(5) Does X get touchy, easily irritated or annoyed?
(6) Does X ever get angry or resentful?
(7) Is X ever spiteful?
(8) Does X ever blame other people for his/her mistakes or misbehaviour?

ODD Problems Frequency

(1) How many days in a week does X lose his/her temper? Would it be more or less than 3 days in a week?
(2) How often in a week would X argue with you or answer you back?
(3) How many days in a week would X be disobedient?
(4) Does X ever argue with you, teachers or other adults? (FREQUENCY)
(5) Does X get touchy, easily irritated or annoyed? (FREQUENCY)
(6) Does X ever get angry or resentful? (FREQUENCY)
(7) Is X ever spiteful? (FREQUENCY)
(8) Does X ever blame other people for his/her mistakes or misbehaviour? (FREQUENCY)

Conduct Problem Scale (CD problems)

(1) Does X tell lies?
(2) Does X ever steal things, either from around the house, other people's houses or at school?
(3) Has there been a time when X has broken things, torn things up or deliberately knocked things over?
(4) Has there been a time when X has become aggressive?
(5) Does X bully other children?
(6) Does X start fights?
(7) Has X ever used a weapon?
(8) Has X been cruel to people?
(9) Has X been cruel to animals?
(10) Has X ever tried to set fire to something?
(11) Has X ever broken into a building or a car?
(14) Has X truanted from school?

CD Problems Frequency

(1) How often does X tell lies? How many times a week over the past six months?
(2) Over the past six months, how many times a week has X taken things like this?
(3) How many days in a week has s/he broken things? Would it be more or less than 3 days in a week?
(4) How many days in a week would s/he become aggressive? Would it be more or less than 3 days in a week?

Total behaviour symptoms is generated by summing the scores from all the behavioural scales (EM problems, ADHD behaviour, ODD problems, and CD problems).

Below are examples of the scoring procedure for the children's behavioural problems severity and frequency.

EM behaviour (e.g. misery, worries, fears, eating disorders or sleeping disorders)
0 = No problems
1 = Mild problems
2 = Marked problems
3 = Severe problems

Frequency of child EM behavioural problems
(e.g. misery, worries, fears, eating disorders or sleeping disorders)
0 = No problems or less than weekly
1 = On 1 or 2 days a week
2 = On 3 to 6 days a week
3 = Daily

ADHD behaviour
Anchors for attention span (e.g. play, reading)

0 = More than 30 minutes	no problems	
1 = Between 16 and 30 minutes	mild problems	
2 = Between six and 15 minutes	marked problems	in the same way below
3 = Five minutes or less	severe problems	

Anchors for restlessness (e.g. play, reading)
0 = No restlessness
1 = Moves from position once every 15 minutes
2 = More than once every 15 minutes but less than once every five minutes
3 = Once every five minutes or stays in place for less than five minutes

Anchors for ODD behaviour
0 = No loss of temper
1 = Mild, shouts, waves arms, stamps feet
2 = Marked, throws things, kicks objects
3 = Severe, breaks things, kicks or hits people

Anchors for CD behaviour
0 = No stealing
1 = Trivial items, trivial amounts of money
2 = Valuable family possessions
3 = Large sums of money or steals from shops

Anchors for ODD or CD problems frequency
0 = Never lies or less than weekly
1 = On 1 or 2 days a week
2 = On 3 to 6 days a week
3 = Daily

Appendix B

The distribution of parenting skills attributes in the PACS subscales. Presented in this work with the kind permission of Eric Taylor.

Mother's parenting skills

(1) Mother's coping with the emotional pattern. What did you do when X behaved like that? What do you usually do? Does that work? Have you tried anything else? What was the result?
(2) Mother's coping with activity level/inattentiveness: What did you do when X behaved like that? What do you usually do? Does that work? Have you tried anything else? What was the result?
(3) Mother's coping with disruptive/oppositional behaviour. What did you do when X behaved like that? What do you usually do? Does that work? Have you tried anything else? What was the result?
(4) Mother's general coping skills. (The interviewers' comprehension based on the whole interview.)

Father's parenting skills

(1) Father's coping with the emotional pattern. What does he usually do when X behaves like that? Does that work? What was the result?
(2) Father's coping with activity level/inattentiveness. What does he usually do when X behaves like that? Does that work? What was the result?
(3) Father's coping with disruptive/oppositional behaviour. What does he usually do when X behaves like that? Does that work? What was the result?
(4) Father's general coping skills. (The interviewer's comprehension based on the whole interview.)

Parental agreement

(1) Do you and your partner agree or disagree over how to handle X when s/he is displaying emotional problems? Do you handle the behaviour in different ways or overrule each other's orders? Do you and your partner ever argue about how to handle X? Do you argue when X is present?
(2) Do you and your partner agree or disagree over how to handle X when s/he is displaying inattentive hyperactive behaviour? Do you handle the behaviour in different ways or overrule each other's orders? Do you and your partner ever argue about how to handle X? Do you argue when X is present?
(3) Do you and your partner agree or disagree over how to handle X when s/he is displaying inattentive hyperactive behaviour? Do you handle the behaviour in different ways or overrule each other's orders? Do you and your partner ever argue about how to handle X? Do you argue when X is present?
(4) Parents overall consistency. (The interviewer's comprehension based on the whole interview.)

Anchors for parenting skills

1 = doubtful/questionable parenting skills
(parental actions are making the problems worse or adding new problems, problems get out of hand, or abusive actions),
2 = ineffective parenting skills
(the parent is using ineffective strategies only, but the parents actions do not aggravate the problem, or lack of response to a problem),
3 = average parenting skills
(problems are not avoided, but ineffective strategies have been replaced with more effective ones) to
4 = good parenting skills
(problems always or nearly always anticipated and avoided, parents are acting according to a plan.)

Anchors for parental agreement

1 = severe disagreement
2 = different behaviour towards the child
3 = difference in opinions but not of style
4 = no disagreement in upbringing methods

Appendix C

The distribution of attributes in the SDQ subscales. (http://www.sdqinfo.com/d7a.html)

Emotional Symptoms Scale (EM problems)

(1) Often complains of headaches, stomach-ache or sickness.

(2) Many worries, often seems worried.

(3) Often unhappy, down-hearted or fearful.

(4) Nervous or clingy in new situations, easily loses confidence.

(5) Many fears, easily scared.

Conduct Problem Scale (CD problems)

(1) Often has temper tantrums or hot temper.

(2) Generally obedient, usually does what adults request.

(3) Often fights with other children or bullies them.

(4) Often lies or cheats.

(5) Steals from home, school or elsewhere.

Hyperactivity Scale (ADHD behaviour)

(1) Restless, overactive, cannot stay still for long.

(2) Constantly fidgeting or squirming.

(3) Easily distracted, concentrations wanders.

(4) Thinks things out before acting

(5) Sees task through to the end, good attention span.

Peer Problems Scale

(1) Rather solitary, tends to play alone.

(2) Has at least one good friend.

(3) Generally liked by other children.

(4) Picked on and bullied by other children.

(5) Gets on better with adults than with other children.

Prosocial Scale

(1) Considerate of other people's feelings.

(2) Shares readily with other children.

(3) Helpful if someone is hurt, upset or feeling ill.

(4) Kind to younger children.

(5) Often volunteers to help others.

The Total Difficulties Score

is generated by summing the scores from all the scales except the prosocial scale. The resultant score can range from 0 to 10.

Anchors when scoring the SDQ subscales:
0 = not true
1 = somewhat true
2 = certainly true

Appendix D

Means and Standard Deviations for the Experiment Group Mothers' and Fathers' Parenting Skills, and Child Behaviour, at T1 and T2, Measured with PACS.

	T1		T2	
	M	SD	M	SD
Mother's parenting skills [a]	2.81	.57	3.26	.63
Mother's general coping skills	2.61	.70	3.18	.77
Mother's coping with EM problems	3.36	.82	3.61	.61
Mother's coping with ADHD behaviour	2.70	.81	3.12	.70
Mother's coping with ODD/CD problems	2.58	.75	3.12	.82
Mother's expressed warmth	1.33	.99	1.39	.90
Mother's expressed criticism	1.45	.91	1.48	1.03
Father's parenting skills [a]	2.76	.67	3.07	.71
Father's general coping skills	2.57	.73	3.00	.76
Father's coping with EM problems	3.22	.90	3.41	.77
Father's coping with ADHD behaviour	2.67	.76	3.05	.79
Father's coping with ODD/CD problems	2.48	.90	2.83	.94
Parental agreement [a]	3.01	.78	3.23	.75
Parental overall consistency	3.91	.89	3.14	.89
Parental consistency with EM problems	3.09	.97	3.36	.90
Parental consistency with ADHD behaviour	3.00	.93	3.18	.91
Parental consistency with ODD/CD problems	3.09	.87	3.23	.87
Child all-inclusive behaviour [b]	1.09	.33	0.94	.32
Child's EM problems	0.51	.30	0.48	.29
Child's ADHD behaviour	1.11	.43	1.08	.46
Child's ODD problems	1.76	.61	1.39	.58
Child's CD problems	0.98	.52	0.83	.45
Child behavioural problems frequency [b]	1.45	.56	1.17	.49
ODD problems frequency	1.83	.70	1.48	.69
CD problems frequency	1.07	.67	0.85	.52

a) Summed variable of the below-mentioned parental coping.
b) Summed variable of the below-mentioned child behavioural problems.
EM = Emotional problems, ADHD= Attention-Deficit/Hyperactive Disorder, ODD/CD= Oppositional Defiant Disorder, and Conduct Disorder combined.

Appendix E

Means and Standard Deviations for the Control Group Mothers' and Fathers' Parenting Skills, and Child Behaviour at T1 and T2, as Measured with PACS.

	T1		T2	
	M	SD	M	SD
Mother's parenting skills [a)]	3.00	.59	3.13	.51
Mother's general coping skills	3.00	.60	2.92	.79
Mother's coping with EM problems	3.58	.67	3.92	.29
Mother's coping with ADHD behaviour	2.67	.78	2.92	.79
Mother's coping with ODD/CD problems	2.75	.87	2.75	.62
Mother's expressed warmth	1.17	72	1.33	.65
Mother's expressed criticism	1.25	1.06	1.08	90
Father's parenting skills [a)]	3.03	.59	3.34	.60
Father's general coping skills	3.00	.76	3.25	.89
Father's coping with EM problems	3.63	.74	4.00	.00
Father's coping with ADHD behaviour	2.75	.71	3.13	.84
Father's coping with ODD/CD problems	2.75	.71	3.00	.93
Parental agreement [a)]	3.56	.55	3.47	.60
Parental overall consistency	3.38	.74	3.38	.74
Parental consistency with EM problems	3.75	.46	3.75	.46
Parental consistency with ADHD behaviour	3.50	.77	3.25	.87
Parental consistency with ODD/CD problems	3.63	.74	3.50	.76
Child all-inclusive behaviour [b)]	0.86	.32	0.85	.37
Child's EM problems	0.48	.25	0.46	.28
Child's ADHD behaviour	1.05	.48	1.09	.58
Child's ODD problems	1.30	.45	1.27	.62
Child's CD problems	0.61	.38	0.57	.36
Child behavioural problems frequency [b)]	1.22	.45	1.02	.42
ODD problems frequency	1.65	.54	1.50	.62
CD problems frequency	0.79	.62	0.54	.49

a) Summed variable of the below-mentioned parental coping.
b) Summed variable of the below-mentioned child behaviour problems.
EM = *Emotional problems*, ADHD= *Attention-Deficit/Hyperactive Disorder*, ODD/CD= *Oppositional Defiant Disorder*, and C*onduct Disorder combined.*

Appendix F

Means and Standard Deviations of Child Behaviour Subscales and Total Behavioural Difficulties According to SDQ for the Experiment Group, Rated by Parents and Teachers at T1 and T2.

	Parents' ratings				Teachers' ratings			
	Experiment group (n = 32)		Control group (n = 8)		Experiment group (n = 29)		Control group (n = 7)	
Scale	*M* (*SD*) T1	*M* (*SD*) T2	*M* (*SD*) T1	*M* (*SD*) T2	*M* (*SD*) T1	*M* (*SD*) T2	*M* (*SD*) T1	*M* (*SD*) T2
Total difficulties	4.38 (0.98)	4.04 (1.04)	3.41 (0.74)	3.53 (0.87)	3.77 (1.00)	3.51 (1.20)	4.03 (0.84)	3.54 (0.56)
Emotional problems	0.55 (0.50)	0.46 (0.41)	0.28 (0.37)	0.35 (0.33)	0.35 (0.35)	0.31 (0.39)	0.57 (0.42)	0.31 (0.34)
Conduct problems	1.41 (0.35)	1.26 (0.42)	0.96 (0.41)	1.03 (0.41)	1.10 (0.45)	1.03 0.47)	0.74 (0.47)	0.69 (0.36)
Hyperactive behaviour	1.67 (0.35)	1.61 (0.47)	1.35 (0.48)	1.45 (0.40)	1.59 (0.49)	1.48 (0.48)	1.63 (0.42)	1.77 (0.21)
Peer problems	0.75 (0.47)	0.71 (0.45)	0.83 (0.27)	0.70 (0.56)	0.72 (0.43)	0.69 (0.49)	1.09 (0.43)	0.77 (0.27)
Prosocial behaviour	1.12 (0.37)	1.07 (0.42)	1.12 (0.40)	0.93 (0.41)	0.78 (0.46)	0.93 (0.49)	0.51 (0.63)	0.84 (0.39)

Appendix G

Means and Standard Deviations of Child Behaviour Subscales and Total Behavioural Difficulties According to SDQ for the Experiment Group, Rated by Parents and Teachers at T1, T2 and T3.

	Parents' ratings (n = 20)			Teachers' ratings (n= 16)		
Scale	*M* (*SD*) T1	*M* (*SD*) T2	*M* (*SD*) T3	*M* (*SD*) T1	*M* (*SD*) T2	*M* (*SD*) T3
Total difficulties	4.30 (1.04)	3.87 (1.11)	3.72 (1.15)	3.82 (0.87)	3.35 (1.08)	3.19 (1.37)
Emotional problems	0.47 (0.48)	0.39 (0.39)	0.33 (0.36)	0.35 (0.24)	0.31 (0.27)	0.41 (0.34)
Conduct problems	1.45 (0.34)	1.31 (0.36)	1.32 (0.35)	1.25 (0.31)	1.08 (0.36)	1.08 (0.38)
Hyperactivity behaviour	1.70 (0.32)	1.57 (0.36)	1.59 (0.48)	1.61 (0.42)	1.46 (0.44)	1.40 (0.61)
Peer problems	0.70 (0.52)	0.60 (0.45)	0.56 (0.48)	0.67 (0.45)	0.62 (0.44)	0.43 (0.41)
Prosocial behaviour	1.13 (0.42)	1.09 (0.43)	1.20 (0.49)	0.76 (0.47)	0.87 (0.47)	1.04 (0.55)

SVENSK SAMMANFATTNING

Detta arbete undersökte effekterna av ett kortvarigt gruppbaserat interventionsprogram benämnt Familjeskolan POP (Preschool Overactivity Programme). Familjeskolan är avsedd för familjer med barn i förskoleåldern (3-6 år), med beteendesvårigheter såsom ADHD (Attention Deficit Hyperactivity Disorder), ODD (Oppositional Deficit Disorder) eller CD (Conduct Disorder). Målet för Familjeskolan är att öka föräldrarnas kunskaper och självförtroende då de har ett krävande svårhanterligt barn att uppfostra. Familjeskolan strävar också till att reducera barns icke-önskvärda beteenden genom att öka deras sociala färdigheter och koncentrationsförmåga.

45 mödrar och deras barn från Helsingfors med närmaste omgivning deltog i denna undersökning. Av dessa deltog 33 i Familjeskola-programmet medan de 12 övriga bildade den s.k. kontrollgruppen.

Interventionens effektivitet utforskades med hjälp av en halvstrukturerad intervjumetod benämnd Parental Accounts of Children's Symptoms (PACS). Intervjuer utfördes innan familjerna påbörjade interventionen (T1) och 6 månader efter Familjeskolan påbörjats (T2). Med hjälp av PACS samlar man detaljerad information beträffande barnets emotionella problem, koncentrationssvårigheter, hyperaktivitet och trotsigt beteende. Den avslöjar också föräldrarnas sätt att reagera och agera när deras barn visar ovannämnda beteendesvårigheter. Med hjälp av PACS intervjun kan man också utforska familjens bakgrundsförhållanden, samla information om hur mycket tid föräldrarna ägnar åt sina barn, samt kartlägga föräldrarnas kritiska eller varma förhållningssätt gentemot barnet.

De eventuella effekterna och deras varaktighet undersöktes även med hjälp av frågeformuläret Strengths and Difficulties Questionnaire (SDQ) vid tidpunkterna T1, T2, och efter ett års uppföljning (T3). SDQ är ett kortfattat kartläggande instrument, med vars hjälp man kan samla information beträffande barns beteende, känsloliv och människorelationer. Frågeformuläret innehåller också en tilläggsdel, som ger information om barnets bekymmer, om tiden hur länge problemen har varat, samt om barnets sociala svårigheter. Frågeformuläret ifylldes både av föräldrarna och av dagvårdspersonalen.

Förändringarna i föräldrakunskaper och barnens beteende under de olika tidpunkterna undersöktes i förstahand med hjälp av generella linjära modeller (GLM) between-subjects multivariata variansanalyser (MANOVA). Enligt nuvarande praxis gjordes också analyser av effektstorlek (ES).

Undersökningsresultaten tyder på förbättringar beträffande både moderns och faderns föräldrakunskaper efter Familjeskola-interventionen. Det är att lägga märke till att enbart mödrar deltog i interventionsprogrammet. Efter programmet klarade mödrar enligt egen utsaga, och i viss mån även fäder, vardagen bättre (general coping skills). De klarade även bättre av barnens beteendesvårigheter (CD), eller när de var hyperaktiva eller okoncentrerade (ADHD). Familjeskolan hade också en positiv effekt på föräldrarnas enighet. Resultaten påvisade också, att programmet var effektivast för de mödrar som före Familjeskolan upplevde sig besitta ringa föräldrakunskaper. Förändringar i samma utsträckning kunde inte konstateras i kontrollgruppens föräldrakunskaper.

Mödrarna rapporterade en signifikant minskning i barnens totala beteendesvårigheter. Efter interventionen ansåg mödrarna att deras barn var mindre olydiga, hyperaktiva och bekymrade samt att deras beteendesvårigheter (CD) var lindrigare. Dagvårdspersonalen hade också observerat en minskning i barnens totala beteendesvårigheter samt ADHD-likt beteende. Enligt dagvårdspersonalen hade barnens totala beteendesvårigheter och problem med koncentration och hyperaktivitet också minskat. Motsvarande

förbättringar uppnåddes inte i kontrollgruppen. En viss försiktighet vid tolkning av resultaten är att rekommendera, eftersom de övergripande (multivariata) MANOVA-analyserna inte påvisade signifikanta skillnader mellan försöks- och kontrollgruppen, enligt traditionell nollhypotestestande statistik. Analyserna baserade på effektstorlek påvisade däremot överlag positiva resultat.

Resultaten från uppföljningsintervjun, ett år efter att Familjeskolan påbörjats (T3), visade också att barnens beteendeförändringar var bestående både hemma och i daghemmet. Både föräldrar och dagvårdspersonalen rapporterade en signifikant minskning i barnens totala svårigheter jämfört med T1. Föräldrarna rapporterade en marginell minskning i barnens ADHD-liknande beteende, beteendesvårigheter och i svårigheter med kamrater mellan T1 och T3. Enligt dagvårdspersonalen hade barnens beteendesvårigheter (CD), hyperaktivt/okoncentrerat beteende och svårigheter med kamrater minskat signifikant under ett års period. En jämförelse av skattare (förälder vs. dagvårdspersonal) visade att föräldrar tenderade att skatta barnets beteende strängare.

Resultaten av denna undersökning stödjer hypotesen att kortvariga gruppbaserade interventionsprogram kan åstadkomma permanenta förbättringar i föräldrakunskaper och barnens beteende. Detta gäller främst hyperaktivitet, koncentrationssvårigheter och trotsighet, medan Familjeskolan inte verkade ha någon större effekt på barnens sociala färdigheter.

Nyckelord: Föräldraskolning, evaluering, förskolebarn, koncentrationssvårigheter, hyperaktivitet, trotsighet, beteendesvårigheter.

Upbringing is a challenging task and it has been claimed that parents today more often than previously are in need of guidance in order to be able to manage their children's challenging behaviour.

A variety of parent and child training programmes have been designed with the purpose of improving parenting practices and reducing children's behavioural problems. The current study describes the impact of a short-term parent and child group training programme called The Family School POP (Preschool Overactivity Programme), (Perhekoulu POP® in Finnish), on hard-to-manage young children and their parents.

The results of this study indicate that the mothers experienced that they after the programme were better able to handle their children in situations when they behaved disobediently or poorly. They also felt that they manage the challenging every day life situations better. The study shows that the intervention programme had positive decreasing effects on children's behavioural difficulties by reducing their conduct problems, ODD-related behaviour, and hyperactivity, both at home and at day-care.

The results of this study suggest that short term parent training programmes may improve parenting skills and child behaviour, and that the improvements achieved are permanent.

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