Comparing a Behavioral and a Non-Behavioral Parenting Program for Children With Externalizing Behavior Problems

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Abstract

In this study we compared two theoretically different parenting programs for children with externalizing behavior problems, one behavioral, Comet, and one non-behavioral, Connect. Participants were 209 parents with children ages 8-12 who were randomized to the two programs. Parents experienced markedly less child externalizing behavior problems, both conduct problems and ADHD symptoms, as well as increased competence, improved family climate, and decreased emotional dyscontrol and levels of stress after both programs. The differences in effects between the programs were small and only measures of use of specific behavioral techniques had medium effects in favor of Comet. Thus, both Comet and Connect appear to be effective interventions but more research is needed, especially concerning long-term evaluations.

Keywords: Externalizing behavior problems, parenting programs, Comet, Connect.

Comparing a Behavioral and a Non-Behavioral Parenting Program for Children With Externalizing Behavior Problems

We want to be loved; failing that, admired; failing that, feared; failing that, hated and despised. At all costs we want to stir up some sort of feeling in others. Our soul abhors a vacuum. At all costs it longs for contact. (Söderberg, 1905/2002, p. 70)

Children’s mental health and the quality of their relationships with parents (here used as all kinds of primary caregivers, including foster parents, step parents, and grandparents when applicable) are strongly linked. Poor relationships and conflicts with parents are associated with low self-esteem, poorer psychological well-being and more physical symptoms (Låftman & Östberg, 2006; Sweeting & West, 1995). According to the Child and Youth Psychiatric Clinic in Stockholm, almost half of those who come to them report relational problems in the family (BUP Stockholm, 2010). Having few conflicts with parents is even more important for the child’s psychological health than parental support (Låftman & Östberg, 2006).

For children with externalizing behavior problems, conflictual and disrupted interactions between parent and child is a common characteristic. In this study, externalizing behavior problems are defined as having symptoms of or meeting criteria for Conduct Disorder (CD), a repetitive and persistent pattern of behavior in which the basic right of others or major age-appropriate societal norms or rules are violated; Oppositional Defiant Disorder (ODD), a recurrent pattern of negativistic, defiant, disobedient, and hostile behavior toward authority figure; and/or Attention Deficit/Hyperactivity Disorder (ADHD), a persistent pattern of inattention and/or hyperactivity-impulsivity (APA, 2004). Children with externalizing behavior problems have more problems and conflicts with their parents than children with other kinds of psychiatric disorders (Greene et al., 2002). Parents of children with conduct problems show high levels of inconsistent/harsh discipline, poor
monitoring/supervision, low levels of warmth/nurturance, and high numbers of negative verbalizations directed toward the child. The children with conduct problems are often noncompliant and aggressive (Bloomquist & Schnell, 2002). Parents of children with ADHD display more directive and commanding behavior, more disapproval, less rewards, and more overall negative behavior than parents in general. The children with ADHD are less compliant, sustain their compliance for shorter time periods, are less likely to remain on task and display more negative behavior than children in general (Johnston & Mash, 2001; Wells, 2004). With these kinds of interaction patterns, conflict is a common result.

Because of this strong association between parent-child interactions and externalizing behavior problems, parenting has been a prime target when trying to help these families. There are more than 400 studies evaluating existing family-based interventions (Stattin & Kerr, 2009). Parent training has been shown to reduce aggression and child non-compliance (Maughan, Christiansen, Jenson, Olympia, & Clark, 2005) as well as primary symptoms of ADHD (inattention and hyperactivity; Sonuga-Barke, Daley, Thompson, Laver-Bradbury, & Weeks, 2001). Some studies have also reported reduction in parental stress and improvements in parental self-esteem (Pisterman et al., 1992; Sonuga-Barke et al., 2001). In a meta-analysis (McCart, Priester, Davies, & Azen, 2006) it was found that behavioral parent training had better effect than cognitive-behavioral therapy for young children with conduct problems. Thus, parenting training is considered an effective intervention for children with externalizing behavior problems.

Many researchers agree that parent training is a good way to treat conduct problems, but there is more disagreement when it comes to ADHD. Stimulant medication has a clear effect on primary symptoms as well as self-esteem and cognitive, social and family functioning (Biederman, Spencer, & Wilens, 2004), but it has limitations. Medication is not effective for all individuals and might cause side effects, but most importantly it does not
maximally affect all symptoms of ADHD and there is little evidence that medication can alter the poor long-term consequences (Wells, 2004). In order to most effectively address the whole spectrum of symptoms and difficulties of ADHD, the best way seems to be a combination of medical and psychosocial treatment.

Comet – Parent Training From a Social Learning Perspective

There are many parenting programs considered evidence-based for externalizing behavior problems today (for a short overview see McMahon & Kotler, 2008). The majority of these are behavioral programs based on social learning theory (Stattin & Kerr, 2009). Many of them can be found under the umbrella of Parent Management Training (PMT), which are the most common and most researched parenting programs (Kazdin, 2005). PMT was first used in the 1960’s and mainly to address the problem of child aggression. Research on coercion – an interaction pattern where aggressive behavior in one part (usually the child) leads the other part (usually the parent) to give in and therefore cause the frequency of aggressive behavior increase – showed that factors such as the ways parents gave commands, ignored prosocial behavior and punished behavior contributed to the escalation of aggression in the home (Patterson, 1982). PMT was developed to help parents enhance their parenting skills in order to reduce aggressive behavior and related conduct problems (Kazdin, 2005).

Comet is a Swedish variant of a PMT program. It is short for COmmunication METHod and is a manual-based program developed in Sweden, but based on behavioral parent training components from American PMT programs developed by Barkley, Webster-Stratton, and Patterson (Kling, Sundell, Melin, & Forster, 2006). As PMT programs in general, Comet contains four distinct components. First, the conceptual view is based on learning theory. The focus is on operant conditioning and the connection between antecedents, behaviors, and consequences as a way to develop and change behavior. Second, they include a set of principles about relations between behaviors and events that precede or
follow those behaviors. From these principles specific techniques can be derived. One
eexample of an important principle is positive reinforcement from which techniques as “giving
praise to the child” can be derived. Third, the programs use active training. The parents are
not merely told how to do, but are asked to practice and role play. The leaders give feedback
and model the techniques in relation to the child but also use the same techniques with the
parents as a way to help them change their behavior. Fourth, PMT integrates assessment and
evaluation with treatment. By systematically monitoring progress during treatment, it is
possible to adjust the treatment when needed (Kazdin, 2005).

Comet has two central aims. The first is to teach the parents to award positive behavior
rather than giving attention to negative behavior. This is a technique clearly derived from
learning theory. But Comet also has another central aim; to increase the positive interaction
between parent and child through play time together every day. This time together is strongly
emphasized to be the ground stone needed in order to use any of the other techniques taught.
Setting limits and consequently following up the child’s behavior, problem solving and
handling conflicts, increased monitoring and knowledge about the child’s whereabouts, and
contacts with school and supporting schoolwork is also a part of Comet (Kling et al., 2006).
These areas are dealt with through teaching, video clips depicting various child-parent
interactions, discussions, role-playing, and homework assignments (Kling, Forster, Sundell, &
Melin, 2010).

*Effectiveness of Comet.* Comet has been evaluated in several studies, see Table 1. In a
pilot study on the original version of the program, "Parent Circles", parents reported
decreased levels of child conduct problems (Föräldracirklar; Hassler & Havbring, 2003). The
results were promising, but caution is needed in interpreting the results, because the sample
was very small. In another study, on the current version, the aim was to elucidate different
demographic variables, how children’s problem behavior changed and how many participants
Table 1

Overview of Published Studies on the Comet Program.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Setting</th>
<th>Target Group</th>
<th>Sample Size</th>
<th>Design</th>
<th>Duration of Program</th>
<th>Data Collection Schedule</th>
<th>Outcomes</th>
<th>Result</th>
<th>Effect Size (if provided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hassler &amp; Havbring (2003)</td>
<td>Sweden</td>
<td>Parents to children (age 4-12) with behavior problems</td>
<td>22 parents</td>
<td>Randomized control trial (9 program; 13 control)</td>
<td>9 weeks</td>
<td>Pretest; posttest</td>
<td>Parents’ experience of their child’s behavior</td>
<td>Significant effects on a number of scales connected to child’s behavior, treatment group significant better than control group</td>
<td>-</td>
</tr>
<tr>
<td>Kling &amp; Sundell (2006)</td>
<td>Sweden</td>
<td>Parents to children (age 3-13) with behavior problems</td>
<td>635 parents</td>
<td>Pre-post test design</td>
<td>11 weeks</td>
<td>Pretest; posttest</td>
<td>Information about parents participating, children’s problems etc.</td>
<td>Mainly parents to children with high levels of problem behavior, high participation</td>
<td>-</td>
</tr>
<tr>
<td>Kling et al. (2010)</td>
<td>Sweden</td>
<td>Parents to children (age 3-10) with behavior problems</td>
<td>159 parents</td>
<td>Randomized control trial (58 program; 61 short version; 40 waitlist)</td>
<td>11 weeks</td>
<td>Pretest; posttest; 6 month follow-up</td>
<td>Parents’ change in approach to their children, Effect on children’s problem behavior due to parents changed approach</td>
<td>Increased parenting ability, Decrease in children’s problem behavior, Children’s social abilities improved</td>
<td>Large (Comet) Medium (short version), Medium (Comet) Small (short version), Small (Comet and short version)</td>
</tr>
</tbody>
</table>

At 10 month follow-up the effect sizes were larger than at 4 months and stronger for Comet than for the short version.
completed the program (Kling & Sundell, 2006). In total 635 parents participated. A majority of the children (77%) had problems with emotions, concentration, behavior, and/or relationships at the start of the program. Child problem behavior decreased after the program, but because behavior changes were not the focus of the study, conclusions are hard to draw. In this early stage both parents and children seemed to benefit from the program.

In a complementary effectiveness study (Kling et al., 2010) with a randomized control trial, 159 parents were divided into three different groups: (a) a full version of Comet, (b) a short version (one day plus home study), and (c) a waitlist group, who received treatment immediately after the posttest. Parents reported increased parenting competence, as well as a decrease in child conduct problems in both treatment groups. The positive effects were contained and strengthened at six month follow-up. The full version had stronger effects than the short version. This supports that Comet is an effective program for children with externalizing behavior problems.

Comet has in several studies had effect on child conduct problems. However, only one of the studies is an effectiveness study with a randomized control trial (Kling et al., 2010). These results need to be replicated for further establishing the evidence base of the program. Moreover, the program has never been compared to another program, only to a short version of Comet and a waitlist control group. Furthermore, effects on symptoms of ADHD have not been thoroughly investigated. This is an important aspect, because ADHD is also externalizing behavior problems and has a high comorbidity with conduct problems (Greene et al., 2002; Mannuzza & Klein, 1999). In total, Comet shows promising results, but more research is needed.

In Sweden, behavioral-based programs have received a lot of criticism, especially from an ethic point of view. Most of this criticism points to aspects that could be negative for the child, but could also be positive if used in the right context (SBU:202, 2010). The focus
on compliance instead of respect for the child’s own autonomy has been questioned. Questions have been raised about whether it fosters future autonomy in the child and whether the use of reward systems (token economy) could be seen as a way of manipulation. Especially the use of time out, which is seen as a critical component in order to achieve effect (Kaminski, Valle, Filene, & Boyle, 2008), has received a lot of criticism. If used as a way to exclude the child from the rest of the family, it could be seen as emotional isolation and ignoring of the child itself (Gustafsson, 2009). Behavioral programs in Sweden have to some extent adjusted their content to the criticism (Gustafsson, 2009), but the fact that they are still met with some skepticism, makes it interesting to see if a non-behavioral program can be an option.

*Connect – Parent Training From an Attachment Perspective*

Non-behavioral parenting programs are few but have been found to have the same effect as behavioral programs immediately after the last session (Lundahl, Risser, & Lovejoy, 2005). Connect is a manualized attachment-based parenting program. It was developed in Canada for adolescents with severe conduct problems and is based on research on attachment as well as child and adolescent development and parenting effectiveness combined with clinical experience (Moretti, Braber, & Obsuth, 2009).

Attachment theory is based on a number of different factors, such as biological components, cognitive functions through inner working models, and parents’ sensitiveness for the child’s needs. There are four attachment styles which are recognized in the literature today: secure, insecure avoidant, insecure ambivalent and disorganized (Broberg, Granqvist, Ivarsson, & Risholm Mothander 2006). Attachment behaviors characterize human beings during the whole lifespan, from cradle to grave, and advocates for attachment theory argue that much psychiatric disturbance can be explained through deviation in the development of attachment behavior (Bowlby, 1977).
Insecure attachment is connected to externalizing behavior problems. Early insecure, especially insecure avoidant, attachment has been shown to lead to behavior problems in general and aggressive behavior in particular (Sroufe, Egeland, Carlson, & Collins, 2005). Disorganized attachment further increases the risk for externalizing behavior problems (van Ijzendoorn, Shuengel, & Bakermans-Kranenburg, 1999). The combination disorganized and avoidant attachment seems to be particularly serious (Sroufe et al., 2005). It is uncertain what leads to ADHD and how different family factors interact (Johnston & Mash, 2001). However, there is some evidence that attachment is connected to ADHD (Clarke, Ungerer, Chahoud, Johnson, & Stiefel, 2002; Crittenden & Rinal Kulbottten, 2007; Finzi-Dottan, Manor, & Tyano, 2006; Niederhof, 2009). The risk for a child to develop disorganized attachment decreases as a consequence of helping parents to increase their sensitivity in care giving (Bakermans-Kranenburg, van Ijzendoorn, & Juffer, 2005). Thus, an attachment perspective can contribute to the understanding of externalizing behavior problems.

In Connect some of the core components of secure attachment are targeted; parental sensitivity, partnership and mutuality, parental reflective function, and dyadic affect regulation. Bowlby (1978) emphasized two main tasks for parents: to provide the child with a secure base and to encourage the child to explore from it. Developing sensitivity and reflection is one of the key concepts of Connect. The aim is to make parents shift perspective and see things both from their own and their child’s point of view (Moretti & Obsuth, 2009). All of this will help the parent balance between the two sides of attachment: connection and independence – safe haven and secure base.

Just as Comet, Connect uses active learning such as role-playing and reflection exercises. However, instead of giving explicit advices about behavior, role-plays are used to portray different conflicts that can occur within the family to help parents reflect on the situation. Contrary to Comet, Connect does not use principles about rule-setting, monitoring,
and supervision. Furthermore, it does not use techniques such as reward systems or time out. Home assignments are not used. Instead each session is centered on an attachment principle, for example “All behavior has meaning”, “Conflict is part of attachment”, and “Understanding, growth, and change begin with empathy”. The principles are used for learning about attachment, reflecting on the relationship between parent and child, and how to keep the relationship open and growing.

Effectiveness of Connect. Four studies on the effectiveness of Connect are found in the literature, see Table 2. In the first pilot study on Connect, parents of adolescents with a history of very severe problem behaviors were targeted (Moretti, Holland, Moore, & McKay, 2004). The parents reported decrease in adolescent externalizing behavior problems. A majority of parents expressed increased ability to understand their child, themselves as parents, and their family. In a following study (Obsuth, Moretti, Holland, Braber, & Cross, 2006), parents reported significant progress in their perceived competence and satisfaction, reduced adolescent externalizing behavior problems and reduced levels of avoidance in the caregiver adolescent relationship. In summary, both parents and adolescents seemed to benefit from the program.

To consolidate the results, a new study with a pre-posttest design with a built in waitlist period of four months before treatment and a one year follow-up was conducted (Moretti & Obsuth, 2009). At the starting point the parents reported youth externalizing behavior problems, and 95% fell in the borderline to clinical range of externalizing behavior problems. No significant changes occurred during the waitlist period. After treatment parents reported increases in parenting satisfaction and efficacy, as well as reductions in youth externalizing behavior problems. At one year follow-up improvements after the intervention were maintained or strengthened.
<table>
<thead>
<tr>
<th>Reference</th>
<th>Setting</th>
<th>Target Group</th>
<th>Sample Size</th>
<th>Design</th>
<th>Duration of program</th>
<th>Data Collection Schedule</th>
<th>Outcomes</th>
<th>Result</th>
<th>Effect Size (if provided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moretti et al. (2004)</td>
<td>Canada</td>
<td>Adolescents with severe conduct disorder (age 13-16) and their parents</td>
<td>16 adolescents, 24 parents</td>
<td>Pre-post test design</td>
<td>10 weeks</td>
<td>Pretest; posttest</td>
<td>Parents’ experience of their child’s behavior</td>
<td>Significant reductions reported on youths’ externalizing and total behavior problems</td>
<td>-</td>
</tr>
<tr>
<td>Obsuth et al. (2006)</td>
<td>Canada</td>
<td>Adolescents with severe conduct disorder and their parents</td>
<td>48 adolescents, 48 parents</td>
<td>Pre-post test design</td>
<td>10 weeks</td>
<td>Pretest; posttest</td>
<td>Parents’ experience of their child’s behavior</td>
<td>Improvements in parents’ perceived parenting competence and satisfaction</td>
<td>-</td>
</tr>
<tr>
<td>Moretti &amp; Obsuth (2009)</td>
<td>Canada</td>
<td>Parents to adolescents with behavioral and emotional problems</td>
<td>20 parents</td>
<td>Pre-post test design</td>
<td>10 weeks</td>
<td>Pretest 4 months before; pretest at starting point; posttest after treatment; 1 year follow-up</td>
<td>Parents’ experience of their child’s behavior</td>
<td>Increased parental satisfaction and efficacy and reduction in youths’ problem behavior</td>
<td>Medium effect size in perceived parental satisfaction</td>
</tr>
<tr>
<td>Moretti &amp; Obsuth (2009)</td>
<td>Canada</td>
<td>Parents to adolescents</td>
<td>309 parents</td>
<td>Pre-post test design</td>
<td>10 weeks</td>
<td>Pretest; posttest</td>
<td>Parents’ experience of their child’s behavior</td>
<td>Improved parental satisfaction and efficacy and reduction in youths’ problem behavior</td>
<td>Large effect size in parental satisfaction and efficacy</td>
</tr>
</tbody>
</table>
Finally, in one study, Connect was tested as a community-based practice. A pre-posttest design was used for evaluating the effectiveness of the program. Seventy percent of the 309 parents completed both pre and post treatment measures. Consistent with previous findings, parents reported reductions in symptoms of CD, ODD, and ADHD (regulation of attention). Parents also expressed increased satisfaction and efficacy. Many parents reported that they could see a positive change in their relationship to the child as a consequence of what they had learned (Moretti & Obsuth, 2009).

These findings support the effectiveness of Connect. However, many question marks remain. One of the greatest weaknesses is a lack of comparison or control group. Only one study had a built in waitlist period in the design (Moretti & Obsuth, 2009). So far no randomized control study exists. Just as Comet, Connect has never been compared to another program, and symptoms of ADHD have not been thoroughly investigated. All published studies on Connect are from Canada, thus it is still uncertain how the program works outside of Canada. Furthermore, all above studies were conducted on adolescents. A pre-adolescent manual exists for Connect but there are yet no published evaluations. These question marks need to be straightened out to better determine the quality of the program.

**The Aim of This Study**

Interventions for externalizing behavior problems often include parenting programs. In several studies these programs have shown to be effective, but there is still a gap of knowledge. Connect needs to be evaluated outside Canada and the evaluations of Comet need to be consolidated and broadened. Comet and Connect are two programs based on different theoretical frameworks, which have never been compared. Through a comparison, the effects of the programs could be better evaluated. It also gives a possibility to compare how the different programs specifically affect parenting behavior.

The first aim of our study is to see if Comet and Connect have effects on externalizing behavior problems, including both conduct problems and ADHD. Both programs have had
effects on child behavior problems in earlier studies (Kling et al., 2010; Moretti & Obsuth, 2009), but these results need to be consolidated. Effects on ADHD symptoms are particularly unclear. We would also like to know when the effect occurs and how it changes over time of the intervention. Our hypothesis is that both programs will have effect on conduct problems, but we do not know about the effect on ADHD, when the effects occurs or which program will have the largest effects.

If there is an effect on child externalizing behavior problems, the second aim of our study is to find out something about what actually happens in the parent which can explain the effect. Our hypothesis is that we will find some general effects on parental behavior for both programs. Because conflicts are strongly associated with externalizing behavior problems (Green et al., 2002), we expect to see lower levels of conflicts in families who have undergone Comet and Connect, and that we will see this through improved family climate and decrease in emotional dyscontrol. Based on earlier research (Moretti & Obsuth, 2009; Pisterman et al., 1992) we also expect lower levels of parental stress and improved feelings of parenting competence.

Our hypothesis is also that there will be some program specific effects. From a theoretical perspective, we think that different changes in parental behavior will occur over and above the general effects of the programs. In the Comet group, we expect to see increased use of praise and rewards and increased monitoring. In the Connect group we expect to see increased openness in the child toward the parent, more frequent attempt to understand, increased ability to reflect over one’s own emotions, and decreased emotional suppression.

**Method**

**Participants**

Participants were 209 parents with children ages 8-12 years. They were part of a larger study called *The National Comparison of Parenting Support in Sweden*, comparing four different parenting programs, with funding from the Swedish Social Board. The broader
study covers four different parenting programs for parents with children ages 4-12 years. In our study we focus on parents with children 8-12 years of age, and we limit our analyses to two of the four programs which were included in the broader study: Comet and Connect. Thirty seven percent of the children were girls and 63% were boys. The mean age was 10.3 years for girls ($SD = 1.1$) and 10.2 years for boys ($SD = 1.0$). Twenty percent of the children had some kind of medical or psychiatric diagnose and 17% were on some kind of medication. Forty five percent of the children fell above the 95th percentile on the scale for conduct problems, 25% on the scale for ADHD/lack of attention, and 26% of ADHD/hyperactivity. In 27% of the cases, one of the parents attended sessions, and in 73% both parents did. When both of the parents attended, we decided that the parent (whether male or female) who had taken part in most of the parent training would be the parent which was the prime reporter of the child’s and the parent’s behaviors. If attendance was equal, we chose the mother. Of our 209 parents, 84% were mothers and 16% were fathers. The mothers were between 23 and 54 years old ($M = 39.6$, $SD = 5.6$) and the fathers were between 29 and 60 years old ($M = 42.2$, $SD = 6.4$). Forty percent of the parents had university education. Thirty eight percent had an estimated income per month of less than SEK 30 000 (about $4 730) of the household before taxes. In 2009, the median income per month in Sweden was SEK 21 000 (about $3 450) per adult before taxes (SCB, 2011). Forty three percent of the parents expressed concern about their financial situation. Nine percent of the mothers were born outside Sweden, of which 4% outside Europe, and for fathers the same numbers were 17% and 9% respectively. There were no significant demographic differences between those who participated in Comet and those who participated in Connect, except for levels of conduct problems and lack of attention, see results.
Design

The broader study has a three-group design. The study took place in 25 different Swedish communities (in and around Stockholm, Uppsala, Örebro, Gothenburg, and Lund). In each of these communities, the parents were randomly allocated to three conditions:

1. program X,
2. program Y, or
3. a condition where the parents were asked to read a book about how to deal with behavioral problems in the child.

In essence, each site provided two different parenting programs. They varied between the communities depending on whether the professionals in the particular community were trained in the different programs. All communities could offer at least two different types of parenting programs. But whereas community A could offer parents the parenting programs X and Y, community B could offer the programs X and Z.

In the present study, we examined the 20 communities where there were professionals who used Comet and Connect for the 8-12 year old children. In total 53 parents were randomized to Comet and 156 to Connect. The uneven distribution between Comet and Connect is due to the design of the bigger study (Comet was more widely used in the 25 communities). Because this study specifically tested difference between Comet and Connect, we decided not to include the parents in the control condition (who were given a book to read).

The literature differentiates between the concepts of efficacy and effectiveness trials (Society for Prevention Research, 2004). Efficacy trials typically are small scale studies where the researchers who are responsible for the program under rigorous scientific conditions seek to examine if the program works as it should – theoretically. Effectiveness studies ask another question: does the intervention work under normal, real-life conditions?
The present study is an evaluation of an effectiveness trial: When Comet and Connect are used by professionals in diverse communities, do they operate equally efficient?

Procedure

Child and youth psychiatry, family centers and schools were active in recruiting parents. The parents in the present study came from 20 different locations around Sweden, both urban and rural areas. Parents with children who were autistic, suicidal, psychotic or mentally retarded were not allowed to participate. Parents were allowed to receive help from child and youth psychiatry, social services etcetera, but were asked to avoid participation in other parenting programs during the time of the study.

At an information meeting, the parents were told about the study and conditions for participation. Parents could terminate their participation in the study at any time. All data was dealt with anonymously and only used on group level. Each family was offered SEK 500 (about $80) if completing both pretest and posttest, but independent from program attendance. Those who wanted to participate signed a consent form, filled out the pretest, and were then randomized between the experimental conditions. All data was collected in Swedish.

When the intervention started, the group leaders registered attendance throughout the programs. Of 53 parents randomized to Comet, 42 started the program (79%), whereas 136 of 156 parents started Connect (87%). Sixty two percent of the parents randomized to Comet and 80% of the parents randomized to Connect completed more than half of the sessions. One hundred fifty eight parents completed posttest; 66% (37 parents) in the Comet group and 79% (121 parents) in the Connect group. Of those who completed posttest, 81% in the Comet group and 90% in the Connect group reported that they attended more than half of the sessions.

Immediately after the final session parents filled out posttest. Participants who did not attend the last session of a program received the posttest by mail. If they did not return the posttest within a certain time, they were encouraged to do so through phone calls and letters.
Additionally parents answered a phone interview at three different times. The first interview was conducted the week before the first session of the intervention. After half of the sessions the parents once again answered the phone interview and the final phone interview took place the week after the final session.

Attrition

Of the 209 parents who filled out pretest 51 did not complete posttest. Of those 51 parents, 47% never started any intervention, 18% attended less than half of the sessions, and 35% attended more than half of the sessions.

Interventions

The programs were administered in community settings, such as youth and child psychiatry, schools, and family centers. The leaders were recruited from different professional groups, for example teachers, social workers, and psychologists.

Comet. The program runs once a week for 11 weeks. Each session lasts two and a half hours and is lead by two leaders. A group consists of parents of four to eight children. The general structure of the sessions is (a) a discussion about the past week and the implementation of last week’s techniques, (b) presentation of a principle and how to apply it at home, (c) practicing and role playing the new technique, and (d) presentation of how to apply the new techniques at home the following week. For specific contents of each session, see Table 3.

The majority of the leaders of Comet was already trained and had experience of running the program at recruitment. The training to become a group leader of Comet was conducted by an education unit within the social services in the city of Stockholm. It starts with three full-day workshops and continues with supervision during the first run of the program. Supervision is done by clinical psychologists, in groups of no more than six group leaders at eight different times during the program.
**Connect.** The program runs once a week for 10 weeks. Each session lasts for one hour and is led by two leaders. A group consists of 8-14 parents. The general structure of the sessions is (a) a brief summary over previous learned attachment principles; (b) introduction of a new principle; (c) active learning exercises, including role play and reflection exercises; and (d) summary and take home message. For specific contents of each session, see Table 4.

Table 3

**Overview of the Content of the Comet Parenting Program.**

<table>
<thead>
<tr>
<th>Content</th>
<th>Goals and Skills</th>
</tr>
</thead>
</table>
| 1 Self-directed play and positive interactions | ▪ Develop skills of being present in interacting with the child, on the child’s conditions.  
▪ Learn to be attentive and praise the child for doing well. |
| 2 Preparations before activities, effective commands and praise | ▪ Enhance the ability to prevent conflicts through preparing the child for what is to come.  
▪ Develop skills in giving effective commands. |
| 3 Preparations before activities, effective commands and praise | ▪ Recognize the child’s positive behavior, as an effective tool of change. |
| 4 Tokens and rewards | ▪ Learn how to develop a reward system, for reinforcing the child’s positive behavior. |
| 5 Tokens and rewards | ▪ Adaptation of reward system for other situations (e.g. school). |
| 6 Involving school teachers through home-notes (individual meeting) | ▪ Develop a reward system for school, together with the child’s teachers. If no school problems: invite someone else close to the child who can help to support. |
| 7 Extinction of negative behavior | ▪ Enhance the ability to avoid negative attention and nagging.  
▪ Develop skills to decrease the attention of the child’s negative behavior. |
| 8 Behavioral contracts | ▪ Learn to handle escalating conflicts, through stopping them as soon as possible and get time to think through the situation. |
| 9 Behavioral contracts | ▪ Learn to set clear rules when it is not possible to avoid a conflict.  
▪ Develop reasonable and fair consequences. |
| 10 Structured problem-solving | ▪ Learn to use problem solving as a tool to discuss and find solutions.  
▪ Encourage parents to become more curious in what the child does outside the home. |
| 11 Relapse prevention | ▪ Make a plan for how to handle future difficulties. |
### Table 4

**Overview of the Content of the Connect Parenting Program.**

<table>
<thead>
<tr>
<th>Content</th>
<th>Goals and Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Understanding behavior through attachment</td>
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</tbody>
</table>
  - Enhance recognition of behavior as a form of communication about attachment.  
  - Develop skills in stepping back and considering alternate meanings of behavior. |
| 2 Attachment over the lifespan |  
  - Enhance recognition that attachment needs continue throughout life but are expressed differently as children develop.  
  - Develop skills in reframing children’s behavior in terms of their developmental level and attachment needs. |
| 3 Conflict: an opportunity for understanding and connection |  
  - Enhance recognition and acceptance of conflict as a normative part of relationships, particularly during adolescence that often communicates attachment needs.  
  - Develop skills in regulating affect, maintaining connection and negotiating in the face of conflict. |
| 4 Autonomy includes connection |  
  - Enhance recognition and acceptance of adolescent strivings for autonomy but continued need for parental availability in support.  
  - Develop skills in providing continued emotional support coupled with clear structure and expectations in response to adolescent behavior. |
| 5 Change – understanding it and what it takes |  
  - Enhance understanding of the impact of one’s own personal narratives on one’s experiences in attachment relationships and capacity to be open to new experience.  
  - Develop skills in identifying the expectations and barriers parents carry regarding change in relationships with their children and enhance motivation to overcome these obstacles. |
| 6 Empathy – the heartbeat of attachment |  
  - Enhance understanding of the role of empathy for children’s and parents’ experiences as essential to secure attachment.  
  - Develop skills in empathic listening with others in conflict situations. |
| 7 Balancing connection and independence |  
  - Enhance understanding that adolescence is a unique developmental period that involves expanding one’s own sense of self, developing new relationships, and balancing these with existing attachments.  
  - Develop skills in maintaining a partnership between parents and adolescents that nurtures their relationship and supports the expansion of attachment relationships in adolescents’ lives. |
| 8 Celebrating attachment |  
  - Enhance understanding that attachment brings joy through celebration of connection with adolescents and pain through negotiation of conflict and change in the relationship. A focus on conflict and change can obscure opportunities for continued celebration of connection.  
  - Develop skills in continuing to embrace opportunities for celebration of connection despite conflict and the importance of clarity and consistency in expectations for adolescent behavior. |
| 9 Two steps forward, one step back: staying the course |  
  - Enhance understanding that change is not a straightforward process; setbacks occur and can undermine motivation (i.e. relapse recognition and prevention).  
  - Develop skills in reframing ‘setbacks’ as opportunities for learning and growth rather than failures. |
| 10 Feedback session |  
  - Encourage understanding of parenting group as a tool-kit for continued work in their relationships.  
  - Gather parent feedback to improve delivery of service. |
Connect had not been used in Sweden before. Therefore, all leaders were trained for this study. The leaders participated in three full-day workshops at Örebro University led by two of the program developers. They were then supervised by certified supervisors the first time they ran the program. Each couple of leaders was required to video tape all 10 sessions, which were viewed by and discussed with the supervisor each week.

Measures

Cronbach’s α and inter item correlations for the measures mentioned below, are found under results, see Table 5.

Levels of conduct problems were assessed through Eyberg Child Behavior Inventory (ECBI; Robinson, Eyberg, & Ross 1980). It is designed to assess parental report of conduct problems in children ages 2-16. The inventory measures the number of conduct problems and their intensity. It consists of 36 items. Parents reported the intensity on a scale from 1 (“never”) to 7 (“always”) and whether they experienced it as a problem behavior by “yes” or “no”. ECBI has been tested in Sweden and found to have acceptable reliability (Axberg, 2007).

To assess symptoms of ADHD we used the subscales for hyperactivity and lack of attention from the Swanson, Nolan and Pelham Rating Scale (SNAP- IV; Swanson, 1992). Each scale consists of 10 items, and answers were given on a 4-point scale, from 1 (“not at all”) to 4 (“very much”).

Parents’ experienced competence was measured by Parents Sense of Competence (PSOC; Johnstone & Mash, 1989). It has two subscales: parental satisfaction and parenting efficacy. In our study we only used the scale for parenting efficacy, consisting of 16 items, which we divided into two subscales: feelings of competence and feelings of incompetence. Parents answered on a scale from 1 (“absolutely do not agree”) to 6 (“totally agree”).

To assess the overall family climate we used the measurement Family Climate (Hansson, 1989). The original scale includes 85 adjectives describing the interactions and the
atmosphere in the family. In our study we used a revised version with 12 adjectives. The parents were asked to circle at least three of the following: “natural”, “irritated”, “messy”, “passive”, “cold”, “hard”, “expectant”, “aggressive”, “restrained”, “loving”, “tense”, and “safe”. We chose to measure how many positive words (natural, loving, and safe) each parent circled, from none to three.

To measure *experienced stress* we used 13 items from the Caregiver Strain Questionnaire (CGSQ; Brennan, Heflinger, & Bickman, 1997) divided into two subscales: objective and subjective stress. Parents were asked to look back on the last six months and how they had been affected by their child’s problems with feelings and behavior. On the scale of objective stress they were asked “How often were you interrupted in what you were doing?”, “How often did you have to stay home from work or neglect other duties?”, “How often did the family have to change their habits?”, “How often did a family member miss out on something?”, “How often did a family member get psychological or physiological health problems?”, “How often did you get into trouble with neighbors, daycare, school or authorities?”, “How often did the family get into financial difficulties?”, “How often did other family members receive less attention?”, “How often were the family relationships disrupted?”, and “How often were there disruptions in the family’s social activities?”. On the scale of subjective stress they were asked: “How often did you feel socially isolated?”, “How often did you feel down or unhappy?”, and “How often did you feel embarrassed because of your child’s problems with feelings and behavior?”. Ratings ran from 1 (“no time”) to 5 (“very often”).

In order to learn more about the child’s openness toward the parent, we used two measures. To assess *emotional openness of the child*, we used the scale About the Child’s Feelings (Kerr & Stattin, 2001). It has five items, where parents place their child between two extremes on a 5-point scale, from 1 (“A fits perfectly”) to 3 (“A and B are equal”) to 5 (“B fits perfectly”). Parents reported whether (A) the child keeps his/her feelings to him-/herself
when worried or upset OR (B) if the child talks about his/her feelings with the parent; (A) the child wants to be close to the parent when he/she is upset or sad OR (B) the child comforts him-/herself when he/she is upset or sad; (A) the child tells the parent a lot about things which have happened when they have not been together OR (B) the child is quite reticent and keeps his/her thoughts about experiences to him-/herself; (A) the child probably has difficulties showing his/her real self to the parent OR (B) the child is like “an open book” – he/she shows exactly who he/she is to the parent; and whether (A) the child feels safe and at ease when he/she is close to the parent OR (B) the child does not feel at ease when the parent wants to be close to him/her.

Second, we measured child’s openness about activities through Child Disclosure, a scale originally used as youth reports about how much they tell their parents (Kerr & Stattin, 2000). In our study it has been changed to parent reports, with minor changes in wording and adjustments to the age group when necessary. It includes five items: “Does the child tell about what happens in school (in relationships to teachers and classmates etc.) or with friends and teachers in daycare?”; “When the child spends the day at school or daycare, does he/she tell how he/she is doing in different subjects in school or what he/she has learned at daycare?”; “When the child has visited a friend, does he/she tell what happened (e.g. the fun things that happened or how the family did things differently from how you do it in your family)?”; “Do you think the child hides a lot about what he/she does when you as parents are not present?”; and “When the child has been out (or alone) and you did not know the details about what the child did, does the child usually spontaneously tell you about what he/she experienced?”.

Parents answered on a scale from 1 (never) to 5 (very often) with response options adjusted to the questions.

To assess parents’ reactions to conflicts, we measured three aspects of parents’ reactions when the child oversteps the limits of what is permissible: attempted understanding, emotional outbursts and avoidance (Tilton-Weaver et al., 2010). The nine items we used have
been revised from child report to parent report and the subscale of avoidance was omitted in our study because of low reliability ($\alpha = .46$). There were three response options (“never”, “sometimes”, and “most often”). Parents were asked “What do you do when your child does something you really do not like?” and then nine responses followed. The scale of attempted understanding included: “The most important to me is to understand why the child did what he/she did”, “I try to understand how the child thought and felt”, “I try to talk it through without creating new conflicts”, “I am clear about my opinion but open for discussion”, and “I listen and try to take the child’s perspective”. The emotional outburst scale included: “My first reaction is anger and I yell at the child”, “I have problems controlling my irritation in such situations”, “I easily get into arguments where we yell at each other”, and “I get angry and get an emotional outburst”.

We used a part of Parents Practice Interview (PPI; Webster-Stratton, 1998; Webster-Stratton, Reid, & Hammond, 2001) to assess how parents changed what they do as parents and what they think about their role as parents, what we here call parenting practices. The scale was originally developed by Webster-Stratton, as a way to measure the effects of the program she developed. We used 23 items from the scale, which were part of six of the seven original subscales: appropriate discipline, harsh and inconsistent discipline, monitoring, physical punishment, positive discipline, and praise and incentives. Because the reliability for appropriate discipline was too low ($\alpha = .48$), the scale was excluded. When we did a factor analysis on praise and incentives, we discovered that the factor actually divided in three. Therefore we decided to split the factor in praise, incentives, and attitudes toward praise and incentives. To see the exact items used and how they were divided see Appendix.

To assess parents’ ability to regulate emotions, we used the Affect Regulation Checklist (ARC; Moretti, 2003). Originally it was used for parents reporting their ability to regulate emotions as well as their youth’s ability, but in our study parents only reported their own ability. The 12 items we used were divided into three subscales: affect dyscontrol, affect...
suppression, and adaptive reflection. Parents answered on a scale from 1 (“does not fit at all”) to 5 (“fits perfectly”). The following items measured affect dyscontrol: “I have difficulties controlling my feelings”, “I find it difficult to calm down when I become upset”, “I often feel that my feelings take control of me and that I cannot do anything about it”, and “It takes a long time for me to get over something when I become upset”. Affect suppression was measured by “To think about my own feelings makes everything worse”, “I really try not to think about my feelings”, “I believe it is good to keep my own feelings under control – and that it is best not to think about them”, “I keep my feelings to myself”, and “I try to keep myself busy with other things not to think about how I feel”. Finally, the items for adaptive reflection were “To think about why I experience different feelings helps me to learn more about myself”, “To think about why I act in certain ways helps me to understand myself”, and “To think back about what has happened in my life helps me to understand myself”. In order to increase the reliability of the subscale of affect suppression, the item “To think about my own feelings makes everything worse” was excluded.

To see changes in problem behavior and parents’ related stress over time we used Parent Daily Report (PDR; Chamberlain & Reid, 1987). It is a phone interview which measures frequency of child externalizing behavior problems and the stress the parents experience because of those problems. Interviewers asked if the behavior had occurred during the last 24 hours and if it was stressful for the parent. We used 24 items out of the original 34: “been troublesome”; “been arguing or talking back”; “been daydreaming”; “been defiant”; “been destructive”; “been afraid”; “been hitting, kicking, or scratching”; “been disrupting or disturbing others”; “had problems during meals”; “been jealous”; “been lying or deceiving”; “been nervous or shaky”; “been indifferent or unaffected”; “been pouting”; “been saying words referring to sex”; “been saying swearwords”; “been teasing”; “been restless”; “been crying”; “been nagging or asking the same question over and over again”; “had tantrums”; “been wining”; “been yelling”; and “been overly tired”. 
In those instances where the original scale was in English, the scales were translated into Swedish and then checked by four independent reviewers. If there were any uncertainties, the four reviewers were asked to give suggestions and one of those was chosen.

**Statistical analysis**

We used general linear model (GLM) in SPSS 18.0 to analyze each measure. Effect sizes were calculated as partial eta-two (partial $\eta^2$; Tabachnick & Fidell, 2007). If using Cohen’s recommendations for effect sizes on an ordinary correlation coefficient, the values obtained are .10 for a small effect, .30 for a moderate effect, and .50 for a large effect (Cohen, 1988). If these values are squared ($R^2$) the following values are obtained: .01 for a small effect, .09 for a moderate effect and .25 for a large effect. It is these values that we have used in our study.

We did an intention to treat analysis (Hollis & Campbell, 1999), in this case defined as including all participants who completed posttest independent of participation in interventions. Because 4% never started any intervention and 8% attended less than half of the sessions, we believe that the effects of the programs are underestimated. However, if we had been able to include all who we intended to treat, including those 24% who did not complete posttest, the effects would probably have been even weaker, because many of those 24% never attended any sessions.

**Results**

We present the results from the GLM of each measurement, except PDR, in Table 5, showing reliabilities at pretest and posttest, means and standard deviations as well as effect sizes. In those instances where there was an interaction effect, the result is plotted in a graph, see Figure 1 through 3 and 5 through 10.

Was there a change in child externalizing behavior problems following the interventions? The number of conduct problems decreased, $F(1, 126) = 42.91, p < .001$, as well as their intensity, $F(1, 152) = 189.50, p < .001$. ADHD symptoms decreased, both
### Table 5

*Repeated Measures Effects Over Time and by Program.*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Inter item correlation</th>
<th>Chronbach’s $\alpha$</th>
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<th>Connect</th>
<th>Partial $\eta^2$</th>
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<td>Pre  Post</td>
<td>Pre  Post</td>
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*Note.* Values within brackets represent number of participants on each scale, first for Comet and then for Connect.

* $p < .05$. ** $p < .01$. *** $p < .001$. 

(continue)
Table 5 (continued)

*Repeated Measures Effects Over Time and by Program.*

<table>
<thead>
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<th>Measure</th>
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*Note. Values within brackets represent number of participants on each scale, first for Comet and then for Connect.*

* p < .05. ** p < .01. *** p < .001.
Table 5 (continued)

Repeated Measures Effects Over Time and by Program.

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<thead>
<tr>
<th>Measure</th>
<th>Inter item correlation</th>
<th>Chronbach’s α</th>
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<td>Attitudes toward praise and incentives (37, 119)</td>
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Note. Values within brackets represent number of participants on each scale, first for Comet and then for Connect.
* p < .05. ** p < .01. *** p < .001.
children’s lack of attention, $F(1, 154) = 48.93, p < .001$, and their hyperactivity, $F(1, 153) = 19.84, p < .001$. The change in child behavior was larger for Comet than Connect on number of conduct problems, $F(1, 152) = 8.19, p < .001$, intensity of conduct problems, $F(1, 126) = 5.64, p < .001$, and lack of attention, $F(1, 154) = 7.70, p < .001$, see Figure 1 through 3. For hyperactivity there was no difference between the groups. It is worth to notice though, that the Connect group had significantly more conduct problems, $F(1, 126) = 5.78, p < .05$, $\eta^2_p = 0.04$, and significantly higher levels of lack of attention, $F(1, 154) = 5.58, p < .05$, $\eta^2_p = 0.04$, at

**Figure 1.** Program specific effect on intensity of conduct problems (ECBI – intensity).

**Figure 2.** Program specific effect on number of conduct problems (ECBI – problem).

**Figure 3.** Program specific effect on symptoms of ADHD (SNAP-IV – lack of attention).

**Figure 4.** Effect on problem behavior and parents’ related stress over time (PDR).
pretest. Thus, both programs had effect on conduct problems as well as ADHD symptoms, though the effects for Comet were stronger.

What about the children with the most problems, what changes in externalizing behavior problems were there? Before intervention, 45% of the children in our sample were above the 95th percentile on conduct problems, thus showing clinical signs, but only 30% remained there after intervention, $F(1, 126) = 14.51, p < .001, \eta^2_p = 0.10$. When it comes to symptoms of ADHD, before intervention 25% of the children were above the 95th percentile on lack of attention and 26% on hyperactivity. After the programs the percentage decreased to 17 on both scales: lack of attention $F(1, 154) = 6.70, p < 0.05, \eta^2_p = 0.04$ and hyperactivity $F(1, 153) = 8.11, p < 0.01, \eta^2_p = 0.05$. There were no program specific effects even though the Connect group had significantly more children above the 95th percentile on conduct problems at pretest, $F(1, 126) = 6.43, p < .05, \eta^2_p = 0.05$. Forty nine percent of the children in the Connect group were above the 95th percentile, compared to 30% in the Comet group. Thus, both programs had effect, and the effect did not differ between the programs on externalizing behavior problems for the children with most problems.

What did the effects look like over time? According to the analysis of the phone interviews, see Table 6 for means and standard deviations, child problem behavior and parents’ related stress decreased beginning at time 2, in the middle of the interventions, and then further decreased at time 3, after the interventions, $F(2, 143) = 14.06, p < .001, \eta^2_p = 0.16$, see Figure 4. There were no significant differences between the two interventions. Thus, there was a linear effect over time of the intervention.

Were there any general effects on conflictual family climate? Family climate improved in both groups, $F(1, 156) = 41.71, p < .001$, more for Comet than for Connect, $F(1, 156) = 5.17, p < .001$, see Figure 5. Three of our scales measured emotional dyscontrol of the parent and all of them decreased. Emotional outbursts decreased, $F(1, 156) = 6.69, p < .05$, with no
Table 6


<table>
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<th>Comet (35)</th>
<th>Connect (111)</th>
<th>Total (146)</th>
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<tr>
<td>SD</td>
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*Note.* Values within brackets represent number of participants.

difference between the groups. Harsh and inconsistent discipline declined for both groups, $F(1, 156) = 61.58, p < .001$, but more for Comet, $F(1, 156) = 4.12, p < .05$, see Figure 6. Also, parents’ affect dyscontrol decreased for both groups, $F(1, 156) = 64.97, p < .001$, but more for Comet, $F(1, 156) = 5.94, p < .05$, see Figure 7. Over all, parents experienced improved family climate and less emotional dyscontrol after both programs with some advantage to Comet.

Did parental stress decrease and competence improve? Parents reported both less objective stress, $F(1, 155) = 18.48, p < .001$, and less subjective stress, $F(1, 155) = 24.18, p < .001$, after the programs. Feelings of competence increased, $F(1, 153) = 38.20, p < .001$, and feelings of incompetence decreased, $F(1, 154) = 71.42, p < .001$. There was no difference in effect between the programs on either stress or feelings of competence. Thus, parents experienced both less stress and improved competence after both programs.

What program specific effects did we find for Comet? Comet had a clearly larger effect than Connect on positive discipline, a composite measure of use of praise and incentives in general, $F(1, 152) = 11.46, p < .001$, see Figure 8; use of incentives, $F(1, 154) = 14.10, p < .001$, see Figure 9; and attitude towards use of praise and incentives, $F(1, 154) = 29.74, p < .001$, see Figure 10. It is worth to notice though, that Connect also had effect on
Figure 5. Program specific effect on family climate.

Figure 6. Program specific effect on emotional dyscontrol (PPI – harsh and inconsistent discipline).

Figure 7. Program specific effect on emotional dyscontrol (ARC – affect dyscontrol).

Figure 8. Program specific effect on use of praise and incentives in general (PPI – positive discipline).

Figure 9. Program specific effect on frequency of use of incentives (PPI).

Figure 10. Program specific effect on attitude toward praise and incentives (PPI).
both use of praise and incentives in general as well as use of incentives specifically. Over all, Comet had some specific effects related to behavioral techniques.

What program specific effects did we find for Connect? Connect had no specific effects on any measures, but there were general effects for both programs on some of the measures where we had expected specific effects for Connect. Children were more emotionally open to their parents, $F(1, 144) = 8.61, p < .01$, and told their parents more about what they do when the parents are not around, $F(1, 155) = 9.77, p < .01$. Parents also reacted to conflicts with increased attempt to understand, $F(1, 155) = 7.02, p < .01$, and reported less affect suppression in general, $F(1, 156) = 3.99, p < .05$. Thus, Connect had no specific effects but the children’s openness toward the parents seemed to increase after both programs.

**Discussion**

In this study we compared two theoretically different parenting programs, one behavioral and one non-behavioral, for children with externalizing behavior problems. We found that our hypothesized general effects of the interventions were confirmed. Our results indicate that parents experienced markedly less child externalizing behavior problems, with large effects for both conduct problems and ADHD symptoms, after both programs. We also found that the problems gradually decreased over the time of the intervention, in a linear fashion. Family climate improved with a moderate effect, and emotional dyscontrol decreased with a large effect, indicating that conflicts in the families had decreased. Levels of stress decreased with moderate effects and parents’ sense of competence increased with moderate to large effects. Thus, Comet and Connect can be considered effective interventions with strong short-term effects.

Our hypotheses about specific effects of the programs were not confirmed. The differences in effects between the programs were small and only measures of use of specific behavioral techniques had moderate effects in favor of Comet. Connect had no specific
effects. Comet had larger effects on child externalizing behavior problems in the whole group, but that small advantage disappeared in the group of children with most problems. Comet and Connect appear to affect parental experience in quite the same way in spite of different parental behavior targeted.

The general effects are in line with earlier research. Kling et al. (2010) reported a moderate effect on child problem behavior for Comet. Moretti and Obsuth (2009) reported a small effect on youth conduct problems and a moderate to large effect on lack of attention for Connect. This is to compare with our results showing large effects on both conduct problems as well as lack of attention for both programs. Further Moretti and Obsuth (2009) reported a large effect on parents’ feelings of competence, which is in line with our results, and a large decrease in objective stress, where we have a moderate effect. In consistency with our findings they also reported a decrease in parents affect dyscontrol, with a moderate effect in their study and a large effect in our study. However, we did not see any clear effects on affect suppression and adaptive reflection for either program where Moretti and Obsuth (2009) had moderate effects. In general, our results confirm earlier results for both programs, but show stronger effects on externalizing behavior problems.

**Understanding the effect**

Why do we see a change in externalizing behavior problems after Comet and Connect? What is it that makes the children change their behavior? We suggest that several factors are responsible for the change and that they interact in sometimes intricate ways. One major factor is perhaps stress (Rodgers, 1993). However, lower levels of stress could be a reason for as well as a consequence of less behavior problems. Thus, we find it hard to use stress as a separate explanatory factor, but it is probably a mediating factor in many processes described below.
There is no doubt that behavioral techniques have effect on children’s behavior (Kazdin, 2005). As a behaviorally based program Comet should have effect on child externalizing behavior problems. For many of these techniques we had no direct measures. We did find an increased use of praise and incentives after participation in Comet, but what is more interesting is that we found that parents who participated in Connect also increased their use of praise and incentives though they had never been taught to do so. It could be that giving praise and incentives are quite natural methods for parents to use. If the programs, with non-behavioral methods, decrease levels of stress, the parent may be able to be more flexible and start using techniques that have been forgotten in the midst of all difficulties and conflicts. There was no effect on the scale of praise for either program. The scale of praise measures if the parent gives praise when the child does something good, in contrast to the scale of positive discipline which measures how many times a week/day the parent gives praise or incentives. It is possible that the increase in praise and incentives in general, seen on the scale of positive discipline, is due to increased ability of the parent to see good behavior in the child and not changed behavior when a good behavior is recognized. It is also possible that we have a ceiling effect on the scale of praise. The increases in use of behavioral techniques could account for some of the effect on child externalizing behavior problems.

Although Connect does not contain techniques for directly affecting externalizing behavior, it does include non-behavioral techniques for preventing and handling conflicts. Two of the central techniques are to take the child’s perspective and being able to reflect over one’s own feelings and experiences. We only found a small increase in parents’ attempts to understand their child after both programs and no change in parents’ ability to reflect over feelings and experiences. These results were evident for both Connect and Comet. Looking at the means of both scales we might have a ceiling effect. Either Swedish parents are quite good at trying to understand their child and reflect over their own experiences and/or there was a
problem of social desirability. Increased attempts to understand and ability to reflect over feelings and experiences could lead to less conflict and therefore be a factor causing changes in child externalizing behavior problems, but there is no evidence for this in our results.

Another possible explanation for changes in externalizing behavior problems is the decrease in emotional dyscontrol of the parent. Poor emotional regulation is a common characteristic in children with externalizing behavior problems and the same characteristic is often found in their parents (Greene, Ablon, Goring, Fazio, & Morse, 2004). We found clear decreases in emotional dyscontrol. On two out of three scales measuring emotional dyscontrol, there were large effects. The one scale which had a small effect only had three response options which makes it quite blunt, and looking at the means it is possible that there is a ceiling effect. The fact that the emotional dyscontrol decreased indicates that the parents improved their ability to regulate their emotions which could, mediated by less conflict and improved family climate, lead to changes in child externalizing behavior problems.

What causes this increased ability to regulate emotions? One option is that parents are given useful techniques that work and therefore feel more competent and experience less frustration and stress. Increased competence could also be due to the attention to and encouragement in the role as parent, reflection about parenthood, and normalization through meeting other parents with the same problems. It is likely that feelings of competence and emotional regulation interact in a transactional process which in turn affects child behavior.

We believe that another important factor for reduced externalizing behavior problems is positive interactions between parent and child. Increase in positive parent-child interaction has consistently been associated with larger effects on problem behavior for parenting programs (Kaminski et al., 2008). A secure and cooperative relationship between parent and child is considered a prerequisite for effective parenting (Kochanska, Barry, Stellern, & O’Bleness, 2009). Good relationships between parents and children increase the parents’
ability to accurately understand their child’s experience, which is connected to effective parenting (Gondoli & Silverberg, 1997; Hastings & Grusec, 1997; Kochanska, 1997). It is also the base for development of self-regulation (Kochanska, Barry, Aksan, & Boldt, 2008), which is lacking for children with externalizing behavior problems (Bloomquist & Schnell, 2002; Green et al., 2004). Having a self-regulatory capacity is a protective factor against conduct problems (Kochanska et al., 2008). Therefore, improved relationship between parent and child is an important component in interventions for externalizing behavior problems.

Did parents improve their relationship with their child? We found that children became more open to their parents, both emotionally and about what they do, though the increase was small. We lack measurements for positive interaction such as cooperation, responsiveness and shared positive feelings, which has been found to be a part of a well functioning relationship between parent and child (Kochanska & Aksan, 2006), but giving praise and incentives, which increased, could be seen as one form of positive interaction. We believe that improvement of a relationship takes time and is difficult to measure, especially immediately after an intervention. Increased openness of the child requires trust and trust is earned over time. It is possible though, that openness increased due to changes in parental behavior, which gave the child more opportunities to talk. Still, the increased openness of the child towards the parent indicates that the relationship improved.

How can we understand the stronger effects for Comet? It is possible, that a part of the effect on externalizing behavior problems, probably to some extent mediated by improved parental competence and fewer conflicts, is due to the increased use of behavioral techniques. The teaching of specific behavioral techniques in Comet could account for the difference in effect between the programs. It is also possible that the difference in effect is due to different cultural adjustment (Kumpfer, Alvarado, Smith, & Bellamy, 2002). Comet is developed in Sweden whereas Connect is developed in Canada and has so far not been adjusted to the
Swedish context. Another possibility is that parents experience the behavioral techniques in Comet as more concrete and easier to apply than the non-behavioral techniques in Connect. We can only speculate, but several factors could be causing the difference in effect sizes between Comet and Connect.

At first glance, one compelling option is that the Connect group had significantly more externalizing behavior problems at pretest and that it could be the reason for lower effect sizes. But how then do we understand the fact that the differences in effect on externalizing behavior problems between the programs disappears in the group of children with most problems? It could be that higher levels of problems are qualitatively different from lower levels and therefore require different strategies. In the Comet manual (Foster et al., 2008) we find a pyramid explaining how the program is built up. “Time together” is the foundation, see Figure 11. It is clear that by emphasizing this base of the triangle, Comet has integrated a focus on building the relationship which is not a strict learning theoretical approach. But in spite of the fact that Comet is marketed as communication method and has a focus on building the relationship between parent and child, there is still little time spent on tools for improving this relationship except encouraging spending time together. Thus, Connect puts a lot more time and energy into the base of the

*Figure 11. The Comet pyramid from the Comet manual (Forster et al., 2008, p. L19).*
triangle. It is possible that Connect can compensate for some of the lost effect, and in the case of those children with most problems all of the lost effect, by a stronger focus on the relationship instead of teaching behavioral techniques.

Why is a good relationship between parent and child more important for the children with most problems? It is possible that behavioral techniques are less effective on these children. Research indicates that power assertion is not effective for children with conduct problems (Kochanska & Aksan, 2006) and that these children, because of their impulsivity, are less sensitive to reward and punishment (Newman & Wallace, 1993). It is also possible that these children are those with most problems in the relationship with parents and therefore benefit most from relationship enhancement (Green et al., 2002; van Ijzendoorn et al., 1999). Certain behavioral techniques, such as praise, incentives and time out or other non-physical types of punishment, might be effective in reducing child behavior problems in the short run and break coercive cycles, but helping the child internalizing rules and limits in order to function well in the society as adults, require different strategies (Moore, Moretti & Holland, 1998; Trikett & Kuczynski, 1986). Developing a cooperative relationship could be an alternative way to help children with externalizing behavior problems to internalize values (Kochanska & Aksan, 2006) and increase their ability to self-regulate. Thus, building on the relationship might be equally or more effective than using behavioral techniques for the children with most problems.

**Ethical Aspects**

Several ethical aspects deserve attention. According to the UN Child Convention (1989) the best interests of the child shall be a primary consideration in all actions concerning the child. As mentioned in the introduction, Comet has received criticism from an ethic point of view and has been adjusted to compensate for some of this criticism. Behavioral techniques, when over-emphasized and wrongly used, could be seen as both manipulative and
unacceptable (SBU:202, 2010). If there is a poor relationship between parent and child, it could be necessary to have a focus on strengthening and helping to build the relationship. However, not giving any behavioral tools at all could also be to withhold effective tools for helping these children. There are no easy answers, but a focus on child perspective is desirable when creating and evaluating parenting programs.

Another interesting aspect is the view of parenting in our society today. The development of society has resulted in higher demands on parents. The life course is remarkably more individualized and unpredictable than before (Bremberg, 2004). Democracy, freedom and autonomy are all important building blocks. But how does this go together with underlying values in parenting programs? It is not obvious that program values actually go in line with values of parents or society. If brought to its head, behavioral techniques used in a too stereotypical way, without actually trying to understand the child’s underlying needs, makes the child an object. The child gets attention and encouragement for “good” behaviors and are ignored or punished for “bad” behaviors. If the relationship between the parent and child is not good enough this would result in the child being loved for what it does and not for whom it is. Therefore, some aspects of behavioral techniques do not go well with what our society considers “good parenting”.

Could parenting support replace other interventions? It is important to remember, that even though parenting programs can have effect on child behavior, many of these families are in socially vulnerable situations where structural changes in society are needed (SBU:202, 2010). The society at large still has a responsibility to give all families decent living conditions. Providing parenting support for families of children with externalizing behavior problems is only one of many needed interventions and not ethically defendable as a single alternative.
Pros and Cons of our Study and Suggestions for Future Research

One limitation of this study is that we only used subjective measures from the parents. This entail that we do not know anything about objective changes or the children’s experience of change. Additionally there is a risk of social desirability in parents’ answers, due to the awareness of participating in a study and willingness to be seen as a “good” parent. Another weakness is that we do not have any follow-up. Finally, we lack a control group which did not receive any intervention. Therefore, it is hard to say what would have happened to the parents if they would not have attended the programs.

The major strength of this study is the randomization between two programs based on different theoretical grounds. This gives us a unique opportunity to see how these two parenting programs affect externalizing behavior problems in general and how they affect parental behavior specifically compared to each other. It is also strong points that participants came from different parts of Sweden, both rural and urban, and that we used an extensive battery of measurements, many of which are well established in research.

There is a great need for future research. We need to know more about what actually changes in the parent and how these changes lead to changes in child behavior. It would also be desirable for future research to place a greater focus on the positive interaction between parent and child, for example how these programs affect cooperation, responsiveness and shared positive feelings, and how those factors are related to behavior changes in the child.

Follow-ups are needed to determine the long-term effects of the programs. In the published studies on Comet and Connect only one follow-up, at 6 months and at 12 months after the last session respectively, is reported (Kling et al., 2010; Moretti & Obsuth, 2009). In a meta-analysis of parenting programs (Lundhal et al., 2005) the effects of behavioral programs remained after one year but were small in magnitude. Follow-ups on non-behavioral programs were too few to draw any clear conclusions. If we offer Comet and Connect, we
need to know what effects they have years following intervention. Is the effect on child
externalizing behavior problems maintained? Do parents continue to use behavioral
techniques and are they flexible in this use? Do they continue to spend positive time with their
children? Is the improvement in the relationship between parent and child maintained?

As a part of long-term consequences, it would be important to know if different kind of parenting is effective for different times during the child’s development. Connect was
originally developed for children ages 13-17 (Moretti et al., 2009) and there is a version of
Comet for children ages 12-18 which has yet not been evaluated. It would be interesting to do
a comparison between the programs in that age group. Future research on parenting programs
need to take into account the continuously ongoing development of children and how parents
can adjust to these changes.

Another interesting angle of approach would be to examine the children’s experiences.
Do they see a positive change as well or is it only the parents’ mindsets that change? If the
programs are to change future development of the child, this is a very important question. In
the bigger ongoing study The National Comparison of Parenting Support in Sweden, some of
these questions will be answered.

A Final Comment

How do we choose which program to offer? All kinds of parenting support are
intrusive on the parents’ autonomy, even if participation is voluntary. Therefore it is very
important to evaluate and analyze every single form of parenting support (Bremberg, 2004).
The program has to enhance a positive development of the child, including positive long-term
effects. The ethical perspectives need to be evaluated and the intervention has to be weighed
against alternative interventions. If the program in total still is an option, giving the parent
possibility to choose between different programs could decrease the intrusiveness on the
parent’s autonomy. Comet and Connect both appear to have effect on externalizing behavior
problems. So far we know little about long-term consequences of either program. Both programs do seem to enhance the relationship between parent and child and from an ethical point of view it is difficult to say that one program is better than the other. Alternative interventions on an individual level are few. Offering both programs in order to let parents choose would probably be the best solution, provided that the information about the programs and their active components are clear.

So, what is “good” parenting? Authoritative parenting – being warm and involved, but firm and consistent in establishing and enforcing guidelines, limits and developmentally appropriate expectations – has consistently shown to be beneficial for all aspects of the child’s mental and physical health, both externalizing and internalizing problems (Steinberg, 2001). But developing parenting skills is done in interaction with the child, which means that having poor parenting skills does not necessarily cause child behavior problems, but could be just as much a result of. Research has found parenting to be a predictor of behavior problems, but also behavior problems to be a predictor of parenting (Reitz, Dekovi´c, & Meijer, 2006). Therefore, it is unclear whether authoritative parenting leads to well functioning children, or whether well functioning children lead to authoritative parents.

Well functioning parents use several different styles and techniques when raising their children. Which disciplinary practice used is more depending on the situation than the parent (Grusec & Kuczynski, 1980). Child characteristics might also demand different parenting. Grusec, Goodnow and Kuczynski (2000) suggest that a move is made “from a picture of effective parenting as marked by a particular set of actions or a specific style to effective parenting as a matter of appraisal and flexible action in the face of constantly changing features of children and situations” (p. 206). If this is true, a well functioning parenting support would focus on the relationship between parent and child in order to increase parents’ ability to interpret their child and the situation, and then give them a variety of techniques to
choose from, including behavioral, but making sure that the parents can be flexible in the use of them.
References


Appendix

Parts of Parent Practices Interview Used in This Study

Harsh and Inconsistent Discipline

The subscale included the following items:

The following is a list of things that parents have told us they do when their children misbehave. In general, how often do you do each of the following things when your child misbehaves (that is, does something he/she is not supposed to do)?

- Raise your voice (scold or yell).

- Threaten to punish him/her (but do not really punish him/her).

Answers were given on a scale from 1 (“never”) to 7 (“always”).

Monitoring

The subscale included the following items:

Please answer the following:

- What percentage of the time do you know where your child is when he/she is away from your direct supervision?

- What percentage of the time do you know exactly what your child is doing when he/she is away from you?

Answers were given on a scale from 1 (“none or almost none”) to 5 (“all or almost all”).

- About how many hours in the last 24 hours did your child spend at home without adult supervision, if any?

- Within the LAST 2 DAYS, about how many total hours was your child involved in activities outside your home without adult supervision, if any?

Answers were given on a scale from 1 (“none”) to 7 (“more than 4 hours”).
**Physical Punishment**

The subscale included the following items:

_The following is a list of things that parents have told us they do when their children misbehave. In general, how often do you do each of the following things when your child misbehaves (that is, does something he/she is not supposed to do)?_

- Give your child a spanking.
- Slap or hit your child (but not spanking).

Answers were given on a scale from 1 (“never”) to 7 (“always”).

**Positive Discipline**

The subscale included the following items:

_In an AVERAGE week, how often do you praise or reward your child for doing a good job at home or in school?_

Answers were given on a scale from 1 (“less than once a week”) to 7 (“more than 10 times a day”).

_Within the LAST 2 DAYS, how many times did you praise or compliment your child for anything he/she did well?_

Answers were given on a scale from 1 (“never”) to 7 (“more than 7 times”).

**Praise**

The subscale included the following items:

_This is a list of things that parents might do when their child behaves well or does a good job at something. In general, how often do you do each of the following things when your child behaves well or does a good job?_

- Praise or compliment your child.
- Give your child a hug, kiss, pat, handshake or "high five."

Answers were given on a scale from 1 (“never”) to 7 (“always”).
**Incentives**

The subscale included the following items:

*This is a list of things that parents might do when their child behaves well or does a good job at something. In general, how often do you do each of the following things when your child behaves well or does a good job?*

- **Buy something for him/her (such as special food, a small toy) or give him/her money for good behavior.**
- **Give him/her an extra privilege (such as cake, go to the movies, special activity for good behavior).**
- **Give points or stars on a chart.**

Answers were given on a scale from 1 (“never”) to 7 (“always”).

*Within the LAST 2 DAYS, how many times did you give him/her something extra, like a small gift, privileges, or a special activity with you, for something he/she did well?*

Answers were given on a scale from 1 (“never”) to 7 (“more than 7 times”).

**Attitudes Toward Praise and Incentives**

The subscale included the following items:

*Please rate how much you agree or disagree with the following statements.*

- **Giving children a reward for good behavior is bribery.**
- **I shouldn't have to reward my children to get them to do things they are supposed to do.**
- **I believe in using rewards to teach my child how to behave.**
- **If a child is having trouble doing something he/she is supposed to do (such as going to bed, picking up toys), it is a good idea to set up a reward or an extra privilege for doing it.**

Answers were given on a scale from 1 (“strongly disagree”) to 7 (“strongly agree”).