

**Short behavioral consultation in day care: The effects on day care  
personnel's self evaluated competence, behavior of children with  
ADHD-symptoms and intervention acceptability**

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#### ABSTRACT

This study examined a four phased intervention model for pre-school aged children with ADHD-symptoms. The model included psychoeducation and three meetings of psychological consultation (planning, implementation and evaluations of the interventions) with the day care personnel. The purpose of the study was to survey the day care personnel's experiences of the interventions and the effectiveness and the acceptability of these interventions. The data was collected by questionnaires addressed to the personnel on the children's behavior in the day care environment. This pilot study's results showed that the intervention consultation model had a positive effect on the personnel's self evaluated competence and children's behavior. The interventions were also viewed very acceptable which probably enhances their use in practice. The increase in the day care personnel's self evaluated competence and common skills and knowledge implies that the consultation process gave the personnel means to understand the children better which is essential for the positive interaction between adults and children. In addition the interventions supported the children in the problematic situations. Due to the small number of studies in the field of early ADHD-interventions and the limitations of this pilot study more research is needed.

**Keywords:** Attention Deficit/Hyperactivity Disorder, pre-school, psychological consultation, intervention

## Prologue

This study is a part of the Niilo Mäki Institute's Tomera project in which one of the aims is to evolve the knowledge of evidence based interventions for pre-school aged children with ADHD-symptoms and to produce a guide book of attention related problems and interventions for day care use. It has been really interesting to be a part of this piloting research project; last year in our bachelor's thesis we reviewed the literature on day care interventions and now studied the intervention model in our master's thesis. We would like to thank all the day care workers, children and their parents for participation and co-operation and also our supervisors Vesa Närhi and Satu Peitso from the Niilo Mäki Institute as well as Timo Ahonen from the Department of Psychology.

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## INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most commonly diagnosed disorders in childhood. ADHD has three sub-categories: 1) combined type, 2) predominantly inattentive type and 3) predominantly hyperactive-impulsive type. These categories are based on meeting the criteria for inattention, hyperactivity and impulsiveness (DSM-IV). According to research the prevalence of ADHD is 3 – 5 % in all children and it is considerably more common for boys than for girls (Aronen & Sourander, 2007). Disorder is chronic, but only few of the diagnosed learn to manage their symptoms in adulthood (Blackman, Westervelt, Stevenson & Welch, 1991). According to the Finnish practice guideline ([www.kaypahoito.fi](http://www.kaypahoito.fi)) untreated ADHD-symptoms might cause secondary problems later in life, such as social difficulties, alcoholism or criminal behavior. Early identification is especially important in order to prevent these kinds of problematic developmental processes. It is also important to take into account the high comorbidity of this disorder – for example learning disabilities, conduct disorder, oppositional defiant disorder and anxiety ([www.kaypahoito.fi](http://www.kaypahoito.fi)).

ADHD is a common disorder among school-aged children. It is difficult to set the diagnosis to younger children, because of their early stage of cognitive development. Still the ADHD-symptoms appear clearly already in pre-school aged children. Before diagnosing ADHD it is important to take into consideration the possibility of autism, Fetal alcohol syndrome (FAS), head injury and mental retardation (Blackman et al., 1991). The most fundamental features that define attention deficit hyperactivity disorder are impulsiveness and restlessness as well as difficulties in attention and executive functions (McGoey, Eckert & Dupaul, 2002; Corkum, McKinnon & Mullane, 2005; Aronen & Sourander, 2007). Children with ADHD characteristics also often have difficulties in family relationships, friendships and at school because of their insufficient social skills and easy distractibility (McGoey et al., 2002; Corkum et al., 2005). In this thesis the terms *attention related problems* and *ADHD-symptoms* are used to describe the children participating in this study.

Research in the field of ADHD interventions has focused on school-aged children, but there is only little research on younger children. School-based interventions have been evidenced as efficient means of reducing ADHD-symptoms on school-aged children (Dupaul & Eckert, 1997).

Therefore we can assume that also interventions implemented in the day care environment could help pre-school-aged children with attention deficits and impulsiveness. More research is needed of this particular hypothesis (McGoey et al., 2002).

### **Treatment of attention related problems and ADHD-symptoms**

Research on treatment of attention related problems and ADHD-symptoms shows that efficient evidence based interventions include pharmacological interventions (with psychostimulants) and psychosocial interventions ([www.kaypahoito.fi](http://www.kaypahoito.fi)). Efficient psychological interventions are based on different behavioral and cognitive-behavioral means of behavior modification. Treatment of ADHD-symptoms consists often of both stimulant medication and behavior modification (Chronis, Jones & Raggi 2006; McGoey et al., 2002; [www.kaypahoito.fi](http://www.kaypahoito.fi)).

According to the Finnish practice guideline the first line of treatment with young children is psychosocial. Efficient treatment of ADHD includes adequate knowledge of the disorder and the symptoms in addition to interventions that are planned and implemented individually for each child, family and day care environment ([www.kaypahoito.fi](http://www.kaypahoito.fi)). Individually planned interventions should be initiated immediately when problems in behavior or learning are observed even if the child has not been diagnosed. The Finnish practice guideline suggests that in the beginning of the intervention the target behavior is defined, then the effectiveness of the interventions is evaluated with interviews, clinical assessments and questionnaires and finally the aim is to discontinue the interventions after reaching the intended level of behavior. Studying and developing multifactorial and combined interventions may help children to manage better in school environments, give parents and teachers tools to support these children and strengthen the co-operation between home and school (McGoey et al., 2002). There is a hypothesis that applying the same principles for younger children in day care environments could be efficient. In fact McGoey, Dupaul, Eckert, Volpe and Van Brakle (2005) gained results supporting this hypothesis when they studied 57 children aged three to five years with risk of ADHD.

## **Psychosocial treatments and behavior modification techniques**

Psychosocial treatments include behavioral and cognitive-behavioral interventions, which have been found effective on attention related problems. According to Sheridan and Gutkin (2000) the aim of the interventions is to teach the child means of coping better in different situations and environments and on the other hand make the child's environment more adaptable to support the child. The Finnish practice guideline suggests implementing the interventions extensively in all contexts of the child's life (at home, in the day-care centre etc.) to maximize the effectiveness of the intervention. Pre-school children with ADHD-symptoms benefit from well-organized environment which helps them to act more carefully, systematically and reflectively (McGoey et al., 2002). Interventions should also be designed to match the developmental stage of the child's cognitive abilities and developmental needs (Chronis et al., 2006).

One of the behavioral methods used in treatment of ADHD-symptoms is the model of Contingent Management strategies (CM). CM is based on observing the factors that precede and follow a problematic situation. A helpful tool for analyzing the antecedent and consequent factors that affect the behavior is the ABC-form (Antecedent, Behavior, Consequence). It is essential to pay attention to the situational factors directing the child's attention and to the feedback given to the child during and after the situation. Behavior can be modified by consequential factors like consistent feedback. Especially for younger children the consequences in behavioral interventions should be very consistent and immediate in order to make the connection between behavior and consequences understandable for the child. On the other hand by changing the factors related to situations preceding the problem behavior – like directions and materials – one can enhance both behavior and academic performance (Chronis et al., 2006). These preceding techniques – like pictures or wordlists describing the hoped behavior – are seen more cognitive-behavioral and can be applied even for pre-school aged children taking into consideration their cognitive level of development. Considering the forthcoming starting at school, cognitive exercises are especially important for pre-school aged children.

Behavioral and cognitive-behavioral interventions include teaching the child to control his behavior better and to observe his own behavior and functions. Additionally contingent reward systems, well-defined guidance and structured environment are essential factors of these

interventions (McGoey et al., 2002; Corkum et al., 2005). Organizing the learning environments, situations and task structures in addition to contingent management strategies may be more efficient in reducing ADHD-symptoms than other cognitive-behavioral methods (Dupaul & Eckert, 1997). Behavior modification techniques are used to control and direct the child's behavior in everyday situations. The objective is to adapt the child's behavior into more functional direction by changing the environmental factors affecting his behavior. The Finnish practice guideline lists many different means to modify the child's behavior such as: defining the hoped behavior clearly (for example by pictures), giving the child clear directions, rewarding with praise or using reward systems and by practicing the hoped behavior.

### **The consultation models of intervention implementation**

There is a need for educating day care personnel about ADHD-symptoms and how to manage attention related problems in the day care environment (Stormont & Stebbins, 2005). This study explores an intervention consultation model applying the basic principles of behavioral consultation. Conjoint Behavioral Consultation (CBC) is one of the applications of behavioral consultation and it includes three fundamental considerations: a) an expanded framework for including families in a problem solving process, b) the integration of evidence-based interventions into prevention and intervention practices in consultation problem solving, c) the use of conjoint consultation problem-solving protocols as a practice guideline for the problem-solving process (Sheridan & Kratochwill, 2008). The last two considerations include the basic ideas of this study and the intervention model applied.

Behavioral consultation is usually based on the orientation of behavior-modification or behavior-therapy (Kratochwill & Bergan, 1990). The behavioral consultation model includes the consultation relationship, the knowledge of problem solving, stages of the intervention process in addition to roles and responsibilities of the consultant, consultee and the client. According to Kratochwill and Bergan (1990) the implementation of the model requires knowledge of specific behavioral principles and strategies and the consultation relationship implies to the consultant's knowledge and expertise in assisting the consultee to solve problems. Conjoint behavioral consultation (CBC) emphasizes the importance of collaborative relationships (Sheridan & Kratochwill, 2008). Working together collaboratively the consultant and the consultee try to find



the best and individual solution for each problematic situation. The problem-centered consultation concentrates on a limited number of specific behaviors of immediate concern and the most important goal of consultation is to produce change in the child's behavior (Kratochwill & Bergan, 1990). There are four stages (problem identification, problem analysis, plan implementation and problem evaluation) towards this goal in the problem-solving process and the *figure 1* describes how the consultation process is implemented in this study.

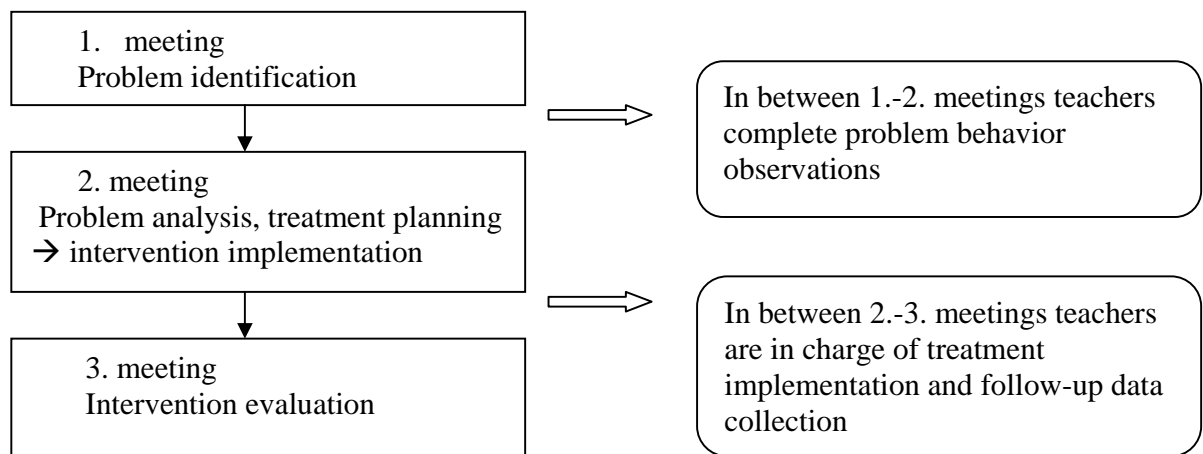


FIGURE 1. Consultation process

According to Sheridan and Kratochwill (2008) the model of CBC includes different ways to implement interventions which are briefly described here from the viewpoint of this thesis. The consultant (the psychologist from Tomera) is working with the consultees (the day care personnel) to serve the client (the child) and the process includes specific target issues and concerns identified by the consultees (the day care personnel and/or parents). In addition, the consultant can train the day care personnel or the parents in various components of the process, e.g. doing observations and/or collecting data or implementing the interventions (Sheridan & Kratochwill, 2008). The objective of this pilot study is to develop an effective intervention model that would be easy and manageable to apply in the everyday-life of the day care and that would require only limited participation of other professionals. This four phased model is conceived through the stages and principles of behavioral consultation.

The special features of this study are the facts that we examine young children (including one girl), the model consists of only four meetings and it is implemented in the natural environment of the day care. Children's problems are viewed as unique and the interventions are based on individual needs. The principles of functional analysis and individual planning and implementation are emphasized. Treatment acceptability and integrity are essential factors in the methodology of ecological consultation (Ehrhardt, Barnett, Lentz, Stollar, & Reifin, 1996) and these factors are also concerned in this thesis. In conclusion the aim of this pilot research is to examine: 1) How a model requiring four meetings would increase the self evaluated competence of the day care personnel working with children with attention related problems? 2) How effective the interventions implemented through this model would be according to the personnel's evaluations? and 3) How acceptable the personnel would find these interventions?

## **METHOD**

### **Participants**

13 day-care centres took part in the research. There were 31 staff members, including 29 women and 2 men with work experience 1,5 to 32 years. One child participated from each day-care centre. The whole intervention model was implemented for 11 children (ten boys and one girl) because two children quit before the evaluation phase. Personnel reported that four of the children had different kinds of developmental problems. The personnel were instructed to choose children with ADHD-symptoms. They were also instructed to choose a child who they thought would benefit this kind of intervention. The final participants were chosen from this group by parent's willingness to attend the research. The Attention and executive function rating inventory (ATTEX) was also used to assess children's problems in impulsiveness, attention and executive functioning (Klenberg, Jämsä, Häyrinen, Lahti-Nuutila & Korkman 2009). Problems were assessed on a three-point scale: no problems, problems occur sometimes, problems occur often. In ATTEX the items are grouped into three scales based on the questions' contents. The scales were impulsiveness, attention and executive functioning. Comparison data was the day care data used earlier in the Tomera project. It was collected 2007 – 2008 in Jyväskylä and it consisted of data of 183 children aged four to six years. The cut-off points for each scale were set at one standard deviation above the mean of the control group. Nine children scored above the cut-off in the impulsiveness and attention scales and eight children on the executive functioning scale. Ten children exceeded the cut-off point at least on one scale and seven exceeded on all scales. Considering this information it was justifiable to argue that these children had ADHD-symptoms even though they did not have the diagnosis.

### **Measures**

We used four different forms to measure self evaluated competence, effectiveness and acceptance:

**Self evaluated competence.** For measuring the change in the self evaluated competence of the day care personnel we used the Self Evaluated Competence - questionnaire (*Appendix*), which was developed in the Tomera project. This form was filled in the pre-treatment and post-treatment situations and the participants were directed to think only the child participating the intervention when replying the questions. The form contains 17 statements about present experience of work, coping, principles and means of guiding the child. Assessment of the occurrence of the procedures and experiences is done on a likert-type scale 1-7 (1 meaning never and 7 meaning every day; when child is in the day care). Means from data were computed in the pre-treatment and post-treatment situations. Cronbach's alpha for all questions in the pre-treatment and post-treatment situations were .841 and .855, respectively. To get more detailed information we decided to categorize the data into three scales: Experience (questions 1, 2, 3, 6 and 7), Function (9, 10, 11, 12, 14, 15, 16 and 17), and Co-operation (4, 5, 8 and 13). The scales were based on the contents of the questions. Experience scale refers to experiences with the child in question and as an educator in general. Function scale refers to the means of guiding, acting and communicating with the child and co-operation scale to co-operation with parents and other educators. Cronbach's alphas for pre-treatment and post-treatment were, respectively: Experience .776 and .748, Function .739 and .783, Co-operation .768 and .765. Means for these scales were computed in the pre-treatment and post-treatment situations. The hypothesis was that both general analysis and the more detailed analysis would indicate increase in self evaluated competence after implementing the model. This was tested with paired samples t-test. In addition there were three statements about common skills and knowledge regarding children with attention related problems. They were assessed on a four-point likert-type scale (1 meaning fully disagree and 4 meaning fully agree). Means were computed and also these were analyzed with paired samples t-test.

**Intervention effectiveness.** To assess the problem severity and situations where these problems occur we used School Situation Questionnaire (SSQ, Barkley 1987) which was translated and adapted to describe 12 different situations in the day care. First one marked whether the behavioral problems appear in the given situations (yes/no). If problems existed in the given situation their severity was evaluated on a likert-type scale 1-9 (1 meaning mild and 9 meaning severe). There was also free space where one could write if there were other situations

where problems occurred or if the child had developmental problems. The severity of problems was assessed by computing the maximum point (in any situation) for every child in the pre-treatment and post-treatment situations. The hypothesis that problem severity would decrease after the interventions was tested with Wilcoxon signed ranks test. Two situations, working in small groups and instructed (e.g. educational) situations, were taken into closer consideration. These were chosen, because all children had at least moderate problems in these situations and because these situations are vital considering school-start. One situation (trips and traveling) was left out from all of the analyses, because there was too much data missing. The number of situations in which children had problems in the pre-treatment and post-treatment situations was also counted. We tested the hypothesis that the number of problematic situations would decrease after the intervention implementation by comparing the sums with Wilcoxon signed rank test. Non-parametric test was chosen for both measures, since n was only 11.

In addition the day care personnel were instructed to use the Goal Attainment Scale (GAS, Kiresuk, Smith & Cardillo, 1994) to measure treatment effectiveness. The expected results were written down using the GAS where the scale is +2, +1, 0, -1, -2. On this scale 0 described the pre-treatment behavior (no progress), +2 the most favorable behavior (goal fully attained) and -2 described the least favorable behavior (significantly worse situation). The behaviors and goals on the scale were supposed to be described as concretely as possible and individually for each child. The scale was used throughout the process and finally the results were evaluated.

**Intervention acceptability.** To report the acceptance and effectiveness of the interventions we used Intervention Rating Profile-15 (IRP-15) (Martens, Witt, Elliott, & Darveaux 1985). It contains 15 statements conceiving the interventions and the procedures used in them (e.g. “This intervention is an effective way to affect on the child’s behavior.”; “I consider this intervention as an acceptable way of approaching the problematic situation.”; “This intervention is beneficial for the child.”). The assessing of the statements was done on likert-type scale 1-6 (1 meaning to fully disagree and 6 meaning to fully agree). This questionnaire was filled in the post-treatment situation. Sum was computed from all questions and from the sum we took descriptive statistics.

### **The intervention model procedure**

As mentioned earlier the model consisted of four phases: psychoeducation and three meetings of psychological consultation (*Figure 2*). The process began by visiting the day-care centres which were interested in participating in the Tomera project. The personnel were familiarized with the project by psychoeducation about attention and hyperactivity related problems and interventions. This meeting gave the day-care centres the opportunity to make a choice whether they wanted to take part in the actual intervention phase. When deciding to take part the personnel’s task before the next meeting was to choose one child for the study. Child’s parents were asked for a written informed consent of participation. The personnel were advised to consider the specific child and the situations that were the most challenging for the child in the daily routines of the day care. The personnel filled the Self Evaluated Competence-form, SSQ and ATTEX. Also a filled example form of GAS was given to personnel for becoming acquainted with the form.

The aim in the first consultation meeting was to make a need-identification-list for the chosen child. The problematic situations to-act-on were chosen so that the future intervention would benefit the child as much as possible. Consultants introduced the ABC-form and GAS-form to the personnel for measuring the baseline and clarifying themselves the situation and behavior in question before the next meeting. An empty GAS-form was given to be filled before the next meeting. By the end of the first meeting the personnel returned the filled need- identification-list, the Self Evaluated Competence, SSQ and ATTEX forms.

In the second meeting the hypotheses of the child’s behavior and its’ functions were specified

using the information that was elicited from the ABC-form. In turn, the aims of the intervention were clarified using the information of the GAS. Then the contents of the interventions were designed - that is the actual activities in order to change the problematic situations and child's dysfunctional responses. Before the next meeting the personnel's task was to implement the intervention and do a follow-up of the results using GAS. IRP-15 form was given to be filled before the next meeting.

The topic of the third psychological consultation meeting was the evaluation. Questions like how the personnel had experienced the model and co-operation as a whole, how effective they thought the implemented interventions were and whether the model had increased their experienced knowledge and competence were discussed. IRP-15 and GAS follow-up forms were collected. SSQ and the Self Evaluated Competence forms were given, filled and returned in this meeting.

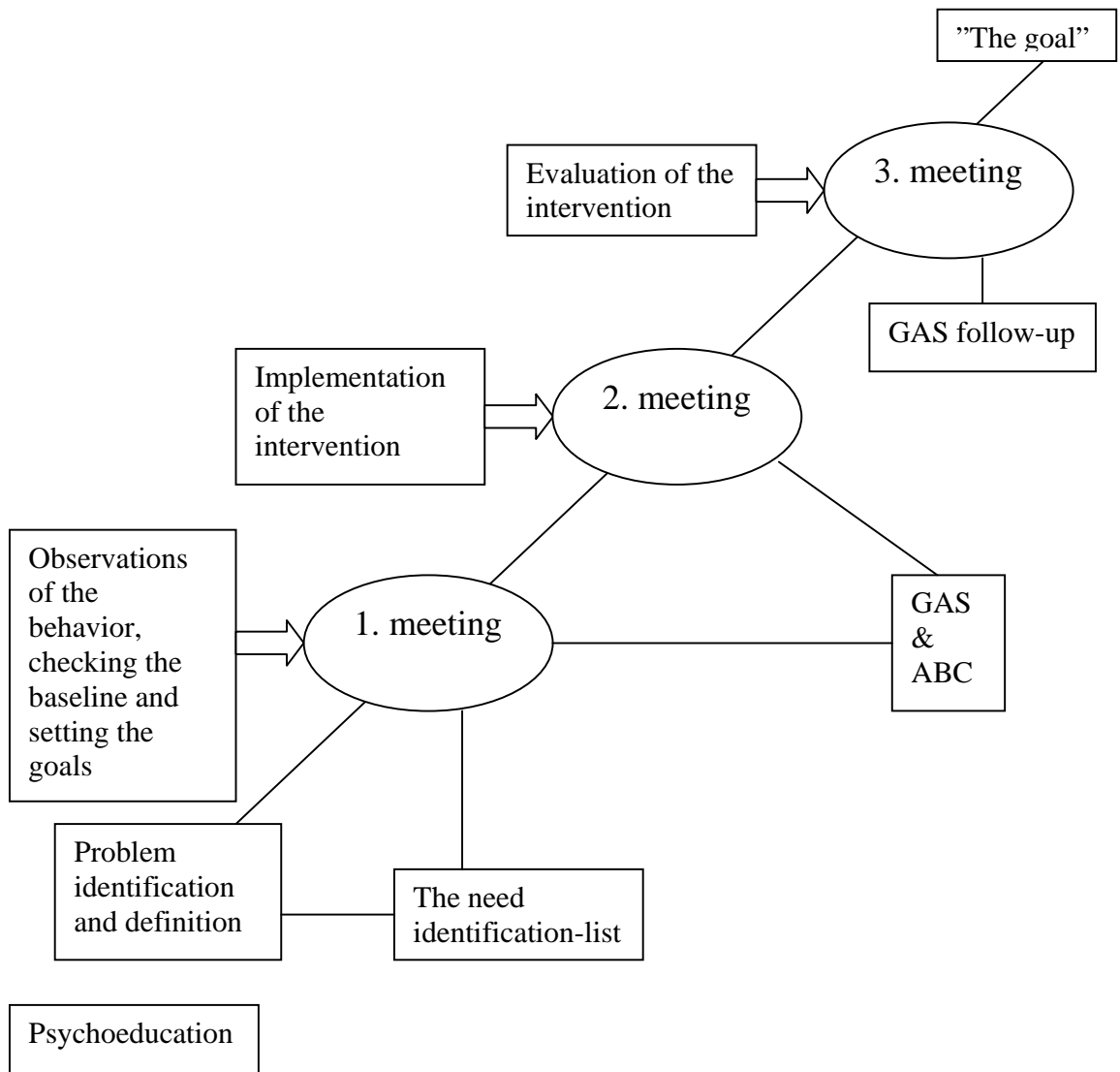


FIGURE 2. The phases of the intervention model



## RESULTS

### Self evaluated competence

The analysis on the sum score of Self Evaluated Competence - questionnaire indicated statistically significant change between the pre-treatment and post-treatment situations. On the three subscales there was a significant positive change on the Experience scale. On the Function scale and Co-operation scale the change was not significant. This implies that self evaluated competence improved significantly in the level of experiences of one self and of the child in question, but not in the functional or co-operative level. Common skills and knowledge about children with attention related problems had also improved significantly.

TABLE 1: Self evaluated competence (n 31)

	<i>Pre-treatment</i>		<i>Post-treatment</i>		<i>t (df 30)</i>	<i>Sig. (2-tailed)</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>		
All questions	5.40	.67	5.63	.59	2.43	.021
Experience	5.22	.73	5.85	.96	3.51	.001
Function	5.40	.74	5.51	.66	1.42	.164
Co-operation	5.80	.98	5.49	.71	.49	.623
CSK**	2.46	.60	2.76	.61	2.49*	.019

\* df 29, \*\* CSK = Common skills and knowledge

### Children and intervention effectiveness

The number of problematic situations had reduced significantly, since there were only positive ranks in the end i.e. all of the children had less problematic situations after the intervention implementation. Problem severity had reduced in the case of seven children. In both small group situation and in the instructed situation problem severity had also reduced in the case of seven children. This indicates that there were significant changes in the two situations which were

considered to be especially important considering school-start. These results as a whole refer to positive change both in the number of problematic situations and the severity of these problems.

TABLE 2: Problematic situations

	<i>Mean Rank negative</i> ( <i>n</i> )	<i>Mean Rank positive</i> ( <i>n</i> )	<i>Ties</i> ( <i>n</i> )	<i>Z</i>	<i>Sig (2-tailed)</i>
Number	6.0 (11a)	.0 (0b)	(0c)	2.97	.003
Severity	4.64 (7a)	3.50 (1b)	(3c)	2.06	.039
Small group	6.71 (7a)	2.67 (3b)	(1c)	2.01	.044
Instructed	6.0 (7a)	1.5 (2b)	(2)	2.34	.019

a. end < beginning

b. end > beginning

c. end = beginning

GAS-forms were supposed to be used for assessing the effectiveness of the interventions, but the data was very difficult to compare due to variation in reporting style. Further considerations will be made in discussion.

### **Intervention acceptability**

The mean was 5.34 (Std. Deviation .49), which refers to very good acceptability. The range was 4 - 6 (from somewhat agree to fully agree). This implies that everyone attributed the interventions positively which supports the conclusion of very good acceptability.

## **DISCUSSION**

This pilot research studied day care personnel's self evaluated competence during the short intervention consultation process. Experiences of the effectiveness and the acceptability of the interventions the personnel implemented in the day care were also measured. The results showed that the self evaluated competence of the day care workers had increased on the level of experiences. According to the personnel the implemented interventions were effective in reducing children's problematic behavior and acceptable for day care use. These relatively positive results imply that the hypothesis of applying school-based interventions into day care environment gains some confirmation. This hypothesis is also supported by a study of McGoey et al. (2005) which suggested that more efficient results are gained when combining behavioral and consultation methods even for pre-school aged children.

The self evaluated competence was measured with three scales (Experience, Function, Co-operation). There were no significant changes concerning function or co-operation while in the level of experiences the results showed significant positive change in self evaluated competence. Also common skills and knowledge was evaluated to be better after the intervention consultation process. The change in self evaluated competence and common skills and knowledge about children with ADHD-symptoms is actually very essential considering the adult-child relationships. Usually children with attention related problems suffer for vicious circles of negative communication and interaction and tend to get attention from adults only by negative behaviors. If the adults really feel they can understand and manage the child and his behaviors the interactions between the child and the adult are likely to change into more positive direction. There were also some signs of positive change in the functional and co-operational level of self evaluated competence, though it was not significant. We could presume that gaining significant effects on these levels would require more time. Certainly it is not easy to change the attitudes not to mention breaking the habits the day care personnel have had during several years of working. Maybe the positive change in the level of experiences and in common knowledge gained in this kind of short intervention process could be the starting point for the change in the functional and co-operational level as well.

Examining the children and the intervention effectiveness on the problematic situations and behaviors showed that there were fewer problems and the problems were less severe after the intervention. This implies that using the individually planned interventions has helped these children to act more functionally and to get more positive experiences and feedback in the day care. Despite the short duration of the intervention process also the results of intervention effectiveness can be considered relatively good. In addition the acceptability of the interventions was really good which implies that the day care personnel found these interventions acceptable and adaptable for day care use and might even use them in the future or recommend them to other workers. One of the reasons for the high acceptability of the interventions is probably the fact that the day care workers were actively planning and implementing the interventions with only a little guidance of other professionals.

### **Limitations of the study**

This study's limitations were the relatively small samples of both the children and the day care personnel. Because of the sample sizes we have to be careful when drawing conclusions. Even though the results seemed to be positive and encouraging, more research is needed in the area of ADHD among pre-schoolers to develop more effective early interventions. This could prevent harmful symptoms and secondary difficulties from developing further and make the school start easier. In addition the lack of girl participants has to be concerned. Like in many ADHD-related researches also this study included mainly boy participants. Difficulties in finding girls to ADHD-researches may be due to the fact that ADHD is more common for boys than for girls and maybe this is the case with ADHD-symptoms in general. It would be very important to study girls in specific to know for example more about their symptom profiles. It is also possible that girls' difficulties are underreported. Girls may for example suffer more for attention than hyperactivity related problems and be "daydreamers". Problems might be more difficult to notice when the child is behaving in an easy manner and seems to be kind, shy and forgetful rather than hyperactive and noisy. And of course studying girls' ADHD would be very beneficial from the viewpoint of consulting parents and educators.

Due to the small sample size there were also certain limitations in the use of statistical analyses. For example categorizing the Self Evaluated Competence -questionnaire was impossible with factor analysis and we decided to divide the questions into three different scales based on the contents of the questions. The contentual consistency of the scales could in this case be assessed only by Cronbach's alpha. The three scales were analyzed in addition to the analysis of the whole questionnaire which in our opinion gives a more detailed description of the self evaluated competence of the day care personnel.

One of the problems to be concerned is the integrity of the procedures. It is very essential for reliable research results that the implementation of observations and interventions is exactly similar to the way they are planned and supposed to implement (Ehrhardt et. al., 1996). And if they are not, it should be reported why. For instance, usually there are many different workers in the day-care centres and they all may have slightly different approaches to the children and the interventions. This is a fact that is likely to affect the integrity. It is also important to notice that sometimes there are substitute personnel working with children and therefore the ideas of the intervention model and the implementation of the interventions should be easy to absorb even for new day care workers. For example using the GAS for setting and evaluating the goals of the interventions was discovered quite difficult to implement with integrity. There were many different applications of GAS in different day-care centres which may be due to insufficient instructions and the lack of time and practice to use the procedure. Even though the GAS- method did not work as hoped for every child in this study, it has many advantages: As a part of the intervention plan it confirms that the intervention includes actions considering the needs of the particular child i.e. the approach is very individualistic. Even if the goals have not been attained, the designed plan is a basis of future planning and modification of new interventions or goals.

## **Implications**

Naturally this pilot study could not include all the interesting questions that might be worth examining in the field of pre-school interventions for children with ADHD-symptoms or attention related problems.

In this study the last interventions were implemented in the spring - which is a very busy time in day-care centres. According to the day care personnel this somewhat disturbed the implementation and evaluations of the interventions. The personnel suggested that it would be better to start in the autumn when there is less fuss going on. It would also be beneficial to take into account that new children arrive in the autumn and it would be easier to affect the child's problems from the very beginning. On the other hand the children who had their interventions implemented in the spring might have had benefits considering their school start next autumn. There was also discussion with the day care personnel about forwarding the information and continuing the interventions in some form at school as well.

Intervention studies in general are important in trying to narrow the gap between research and practice. To develop efficient and functional interventions the researchers and other experts of psychology and behavior modification need the knowledge, experiences and opinions from the field (in this case the day care personnel). In this study the means of getting the information needed were the conjoint consultation meetings and the questionnaires. In every participating day-care centre the model was implemented in collaboration with the personnel. The underlying idea was that the day care workers are the experts when it comes to knowing the children and their behavior in the everyday life of the day care. Psychologists or researchers might suggest different changes or procedures to implement, but they need the practical knowledge of day care workers to actually accomplish the desired results. The meaning of expertise of every member of the intervention consultation process must be emphasized in addition to the importance of collaboration. If the teacher does not get satisfaction from her work and feels herself insecure, she might turn away from the children, her co-workers and the children's parents. If this happens, the collaborative work is impossible. The teacher should not be left alone in the responsibility for children and the challenging situations or behaviors, because if the teacher faces too high expectations in her work and no support, she will probably protest the inquired changes. The change requires continuous learning and self-reflection from the teacher and everyone including the process. This is why the term collaboration should actually become true in the form of conjoint consultation (Sheridan & Kratochwill, 2008).

This model has benefits, because it requires only little time, few consultation meetings and no parent commitment. However, it would be important to know how it would influence the results if the family was committed to the model too. That is, the families would practice the principles of the interventions at home as well. This kind of research has already been done in school settings and it seems to be a very effective way to increase a child's competencies and learning abilities. Especially from the ecological viewpoint it would be justifiable to implement interventions in more than one of the child's environments. According to Sheridan and Kratochwill (2008) one of the three considerations also in conjoint behavioral consultation (CBC) is including families in the problem solving process.

Other implications for further studies could be examining the differences of interventions which focus on the antecedent or consequent factors of behavior modification. It would be interesting to find out if there are significant differences in the effectiveness of interventions that focus on different aspects of behavior. In addition it would be beneficial to find out the optimal number of the consultation meetings to achieve the best results. For example integrity and effectiveness might increase if there were more time and meetings during the process. On the other hand the aim is to develop effective interventions and that the day care personnel could be as independent as possible in planning, implementing and evaluating them. It is certain that some guidance or consultation is still needed. As mentioned the Goal Attainment Scale was one of the methods that would have required more time and effort to be implemented with integrity. Examining the experiences of using GAS could be useful in developing the method for future use.

Despite the limitations of this study and the fact that much is left to examine in the area of pre-school interventions this pilot study shows promising results in enhancing the behaviors of children with attention related problems and in increasing the self-evaluated competence of the day care personnel. It also shows that using the knowledge and experience from school-based interventions it is possible to develop acceptable interventions specifically for day care use.

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## APPENDIX

(The original Finnish questionnaire translated)

Self Evaluated Competence –questionnaire

How often do you experience the following things in your work? How often do you use the following means of guidance with the child? Answer the statements thinking of the specific child (mark one number on each row on the scale 1 to 7: 1 = never, 2 = hardly ever, 3 = seldom (1 to 2 times a month), 4 = every week, 5 = more than once a week, 6 = almost every day, 7 = every day (when the child is in the day care).

Work (work welfare)

1. I feel out of means in guiding the child's behavior.
2. I feel tired as an educator.
3. I feel irritated by the child.
4. I feel the co-operation with the parents is difficult.
5. I can share the problems of upbringing with my co-workers.
6. I feel I can manage with the child and enjoy it.
7. I feel confident about myself and the way I act with the child.
8. I feel I manage to collaborate with the child's parents.

### Principles and means of guidance

9. I praise and thank the child.
10. I negotiate with the child (e.g. about the following situations).
11. I stick to the rules and the consequences of breaking the rules.
12. I name the child's emotions.
13. My co-workers support me in my work with the child.
14. I lose my temper in situations with the child (I get so mad that my emotions take over me).
15. I order the child to do something by raising my voice.
16. I blame the child (e.g. Why do you always...).
17. I reward the child (e.g. If you sit on your seat, you get to play after the...).

Answer the following statements by your own knowledge and know-how/expertise (mark one number on each row on the scale 1 to 4).

1 = totally disagree, 2 = somewhat disagree, 3 = somewhat agree, 4 = totally agree

1. I know enough about children's attention related problems.
2. I know how to act with the child with attention related problems.
3. I know enough about the means of supporting the child with attention related problems.


**TOMERA - kysely**

Vastaaja: \_\_\_\_\_

Pvm: \_\_\_/\_\_\_/\_\_\_\_\_  
Koulutus: \_\_\_\_\_Sukupuoli: *N / M*  
Työkokemus vuosissa: \_\_\_\_\_Työstatus: *kokopäiväinen / osa-aikainen*  
Täydennyskoulutus: \_\_\_\_\_**1. Nykytilanne:**

**Kuinka usein koet työssä toimiessasi seuraavia asioita, ja missä määrin käytät seuraavia ohjauskeinoja haastavan lapsen kanssa (rastita kullakin rivillä yksi numero asteikolla 1-7). Vastaa väittämiin ajatellen lasta, jonka taitoja hankkeessa pyritään harjoittamaan.**

1 = En lainkaan                      4 = Viikoittain                      6 = Lähes päivittäin  
2 = Hyvin harvoin                      5 = Useamman kerran                      7 = Joka päivä (joina lapsi on hoidossa)  
3 = Harvoin (1-2 x kuukaudessa)                      viikossa

En lainkaan ----- Joka päivä

<b>Työ ja jaksaminen</b>	1	2	3	4	5	6	7
1. Koen keinottomuutta lapsen käyttäytymisen ohjaamisessa.							
2. Koen väsymistä kasvattajana.							
3. Tunnen ärtymystä lasta kohtaan.							
4. Tunnen yhteistyön vanhempien kanssa vaikeaksi.							
5. Voin jakaa työtovereideni kanssa kasvatuksen pulmia.							
6. Saan onnistumisen elämyksiä lapsen kanssa.							
7. Luotan itseeni ja kykyyni toimia lapsen kanssa.							
8. Koen onnistuvani yhteistyössä lapsen vanhempien kanssa.							
<b>Ohjauksen periaatteita ja keinoja</b>							
9. Kehun ja kiitan lasta.							
10. Neuvottelen ja teen sopimuksia lapsen kanssa (esim. tulevista tilanteista)							
11. Pidän kiinni sovituista säännöistä ja sääntöjen rikkomisen seuraamuksista							
12. Nimeän lapsen tunteita.							
13. Työtoverini tukevat minua työssäni lapsen kanssa.							
14. Menetän malttini työtilanteissa lapsen kanssa (vihastun niin, että annan tunteilleni liikaa valtaa).							
15. Komennan lasta korottamalla ääntäni.							
16. Moitin ja syyllistän lasta (esim. Taas sinä ..., Miksi sinä aina...)							
17. Palkitsen lasta (esim. Jos istut vähän aikaa paikallasi, pääset tuokion jälkeen leikkimään).							

**Vastaa seuraaviin väittämiin omaa yleistä tietämystäsi ja osaamistasi ajatellen (rastita kullakin rivillä yksi numero asteikolla 1-4)**

1= täysin eri mieltä, 2= jonkin verran eri mieltä, 3= jonkin verran samaa mieltä, 4= täysin samaa mieltä

1. Tiedän riittävästi lasten tarkkaavuusongelmista.	1	2	3	4
2. Osaan toimia hyvin lapsen kanssa, jolla on tarkkaavuuden tai itsesäätelyn ongelmia.	1	2	3	4
3. Tiedän riittävästi keinoista, joilla voidaan tukea lasta, jolla on tarkkaavuuden tai itsesäätelyn ongelmia.	1	2	3	4