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# The Development of a Systemic School-Based Intervention: Marte Meo and Coordination Meetings

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*Antisocial behavior is often persistent, and in addition to causing suffering to children and their families, it also poses considerable costs for society. Children who display externalizing behavior in their early years run a high risk of having severe problems later in life. There is a need for treatment methods that may be used in various settings because these children constitute a group that is hard to reach with conventional treatment methods. In addition, the dropout rate from ordinary treatment is often high. In the present study, a systemic school-based model for early detection and intervention among 4–12-year-old children who displayed externalizing behavior problems was developed and examined in a nonrandomized study in the county of Skaraborg in Sweden. The intervention was collaborative and included a combination of the Marte Meo model and coordination meetings based on systemic theory and practice. Treatment effects in the group who had received the intervention were compared with a group who had received treatment as usual in their ordinary school setting. Assessments were carried out before, and 2 years after, the intervention. For the intervention group (N = 33), there was a significant decrease in the children's reported symptoms in school and in the home. No decrease in externalizing behavior was found in the comparison group (N = 16). There were no dropouts in the intervention group after the intervention had begun. The results are promising; the study demonstrates that it is possible to work effectively with many children who display externalizing behavior problems in a nonclinical setting.*

*Keywords: Marte Meo; Coordination Meetings; School-Based Intervention; Externalizing Behavior Problems*

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## INTRODUCTION

Antisocial behavior, aggression, defiance, and hyperactivity are behaviors that tend to be persistent (Patterson, DeGarmo, & Knutson, 2000). Children who express externalizing behavior early in life are at great risk of developing asocial behavior later on (Kazdin, 1985; Loeber, 1991). The earlier the externalizing behavior problems are expressed, the greater the long-term risk (Moffitt, 1993). Meta-analyses of school-based interventions have shown that no changes, small changes, or even negative changes in aggressive behavior can be expected when no specific intervention is made (Wilson, 2003). Preschool and elementary school teachers are often good at predicting which children will continue to have problems (Farrington, 1987; Tremblay, Pihl, Vitaro, & Dobkin, 1994). Studies have shown that 4%–10% of all children exhibit conduct or externalizing problems, and these constitute a large group within the child and adolescent psychiatric services (Kazdin, 1987). Besides the suffering that these problems create for the children and their families, externalizing behavior problems also involve huge costs for society. In a British longitudinal study, the financial societal costs of persons by age 28 with a childhood diagnosis of conduct disorder were 10 times higher than for persons with no registered childhood problem (Scott, Knapp, Henderson, & Maughan, 2001).

The development of antisocial behavior is a very complex process and is best understood within a transactional model in which genetic, psychological, and social factors interact (Patterson, Reid, & Dishion, 1992; Sameroff, 1995). To protect children and promote health, interventions should target many different domains of the children's lives (Leffert et al., 1998; Webster-Stratton & Taylor, 2001). Many families with a child with antisocial behavior have been in contact with different community agencies (e.g., school health, social welfare, or child and adolescent psychiatric services), but too often with meager results. To be effective, interventions from different agencies should be targeted in the same direction and complement each other. The earlier such interventions are carried out, the higher the probability for a positive outcome (Kazdin, 1987; Patterson, Dishion, & Chamberlain, 1993; Webster-Stratton & Taylor).

A pitfall in the treatment of children with antisocial behavior and their parents is that rates of dropping out of treatment are as high as 65% (Gould, Shaffer, & Kaplan, 1985; Lai, Chan, Pang, & Wong, 1997). This indicates a need for the development and evaluation of interventions in nonclinical settings—focusing on improving children's behavior—as a complement to ordinary services.

When developing school-based interventions, the link between home and school should be addressed (Christensen & Conoley, 1992; Christensen & Sheridan, 2001; Walker, Colvin, & Ramsey, 1995). Collaborative problem solving involving parents, teachers, and school psychologists has been shown to be effective in various studies both for the child's academic performance and for his or her social and behavioral progress (Christensen & Sheridan). It is important to clarify the role of the parents to determine whether they are partners, collaborators, an audience, supporters, or advisors in such interventions (Weiss & Edwards, 1992).

In the current study, we developed and evaluated a systemic school-based intervention: the collaboration model. To bridge the gap between research and clinical practice and to get clinical practitioners to experience a model as useful, researchers and clinicians should meet as early as possible, and the development of the treatment

model should be carried out in the context in which it is to be used (Weisz, 2000; Weisz, Weiss, Donenberg, & Han, 1995). Treatment designed to be carried out in ordinary settings will not be as structured and clear of distractions as in efficacy studies, in which treatment models are evaluated in a laboratory setting with strict control. In ordinary settings (effectiveness studies), patients will form a heterogeneous group with many different symptoms, and the intervention will be carried out by personnel with a broad focus and heavy caseloads (Van de Wiel, Matthys, Cohen-Kettenis, & Van Engeland, 2002).

The ultimate goal of the present study was to coordinate the work of professionals from various organizations who were involved in trying to help the child with externalizing problems and his or her family. To achieve this, Marte Meo was selected as the treatment model of choice, in combination with coordination meetings.

Marte Meo (MM) was developed in the Netherlands by Maria Aarts in the 1980s (Aarts, 2000). The method is based on the idea that children develop and grow in interaction with supportive adults. The assumption is that there is a prototype for developmentally supportive dialogue that provides the child with relevant information and support needed in different stages of the child's development (Aarts; Øvreeide & Hafstad, 1996) When a child is described as having conduct and interactional problems, a problem-affirmative system of communicative behavior often develops around the child. Marte Meo was developed to help children and adults restore and build a supportive dialogue when their communication has been marked by perturbation and disturbances. Although the treatment has become widely used in the Scandinavian countries, no studies of its effectiveness as a treatment for conduct problems have been published.<sup>1</sup> However, one study using a similar method, called the Orion method, has shown promising results (Weiner, Kuppermintz, & Guttman, 1994).

There are two basic elements in MM: analysis and intervention (Aarts, 2000). The first step is to make a 5–10-minute video recording of the child interacting with his or her parent or teacher. The recording is planned in advance and done in different, more or less structured situations, depending on the type of problem in focus. The therapist uses the prototype of developmental and supportive dialogue to analyze and select sequences from the video recording.

Schematically, the MM model for a natural supportive dialogue between adults and children can be described as a structure consisting of three main phases: (1) *Start or connecting*, in which the adult accepts or works towards a common, intersubjective focus with the child. A dialogical link with the child is formed; (2) *Turn-taking with expansion and guiding*, in which the adult and the child, through body language and the use of verbal exchanges, alternate in responding to each other. In this way, there is a rhythmical alternation between expressing one's observations and reacting to the established focus. During turn-taking, the adult will often take a guiding role, helping the child to explore the common focus (expansion) or to connect it to another context (leading); and (3) *Reciprocal endings*, in which the participants in the dialogue are given the freedom to end the interaction and to choose a new common or individual focus. There is a reciprocally accepted change of attention in which the adult is sensitive to the child's initiatives for withdrawal, and the adult is clear in his or her own signals for endings.

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<sup>1</sup>Based on a search for "Marte Meo" in the databases PubMed (<http://www.ncbi.nlm.nih.gov/PubMed/>) and PsycInfo (<http://www.apa.org/psycinfo>).

The dialogical structure is organized into seven principal elements: (1) the adult seeks to locate the child's focus of attention; (2) the adult confirms the child's focus of attention; (3) the adult actively awaits the child's reaction; (4) the adult names the ongoing and forthcoming actions, events, experiences, feelings, and anticipated experience; (5) the adult confirms desired behavior approvingly; (6) the adult triangulates the child in relation to "the world" by introducing persons, objects, and phenomena to the child; and (7) the adult takes responsibility for an adjusted and reciprocal ending.

After analysis, the therapist and adult together view and discuss sequences previously selected by the therapist. The focus of the discussion is to help the adult to see the supportive needs of the child and to stimulate the adult to modify his or her behavior in a way that will promote the child's development. Relevant communicative behavior that will help to achieve this goal is identified from the film sequence. Finally, the adult is given the task of practicing these new types of behavior in daily situations. During the next recording and reviewing, feedback is obtained regarding whether the previous intervention has been helpful and is leading toward the desired goal.

Even if the intervention is directed toward an individual (i.e., the child), the entire system in which the child functions should be a concern of the staff who carry out the intervention (Christensen & Sheridan, 2001). It may be too difficult for the child if he or she is to bear the responsibility of change all by him- or herself with help from neither home nor school. To facilitate the effectiveness of the intervention and to reduce confusion for the child from too many contradicting messages, it is essential to share and discuss expectations regarding the child's behavior with the adults in the family-school system. To address these issues, the *Marte Meo* was combined with coordination meetings.

*Coordination meetings* (CM) implies that a coordinator, parent(s), teacher(s), special needs teacher(s), and sometimes other people who are considered particularly important for the child come together on a regular basis to discuss the child and the intervention. The rationale for the use of coordination meetings, in addition to the aspects mentioned earlier (i.e., addressing many different domains of children's lives, the necessity of targeting interventions in the same direction, the use of collaborative problem solving, the risk of the development of problem-affirmative communication around the child, and the importance of sharing and discussing thoughts and feelings around the child's behavior with the adults in the family-school system), was the assumption that the educating and socializing of children and young people is a responsibility shared between the family and the child's social and professional networks.

The aim of the CMs was threefold: (1) to clarify the context in which the interventions took place by using contextual markers, which included information about the project, formulation of and agreement on a work assignment, exploration and formulation of the goals of the interventions, and clarification of the roles of the participants; (2) to coordinate the intervention at school with possible interventions at home; and (3) to explore parents' and teachers' different "stories" about the child and to co-construct new stories.

Quite often, the relationship between the parents and school staff were strained. One of the most common reasons for this was that the parents and school staff had different opinions about the cause of the child's behavior management problems.

The first focus in the CM was therefore to create a context in which the participants felt trust in that all participants were devoted to a common task: that of promoting the child's development. The formulation of a work assignment, goals, how the goals are supposed to be attained, and continual evaluation of the present activity are important steps in the process of creating trust and managing possible conflicts. The position of the coordinator as a "third party"—that is, someone who is not directly involved with either the school or the family—is very useful when it comes to dealing with different affects, balancing widely divided opinions and structuring the discussion in a constructive direction. From the systemic perspective of multiple causality, the coordinator does not engage in a discussion of the cause of the child's problems, but tries to make it possible to allow several different, even contradictory, stories about the child, teachers, and/or parents to coexist, not arguing about what is right and what is wrong. The goal is to facilitate the creation of a "multiverse" rather than a "universe" (Maturana & Varela, 1988). The exploration of the stories and the co-constructions of new stories about child, teachers, and parents are brought about by the use of a "reflecting" process (Andersen, 1987, 1995) and an open dialogue method (Seikkula et al., 1995; Seikkula, Arnkil, & Eriksson, 2003). For example, in the beginning of the first coordination meeting, the coordinator asks the teacher to tell him or her about how the child was considered for the project. The coordinator and teacher discuss this while the parents listen. The coordinator then turns to the parents and invites them to share what thoughts and feelings came up while listening to the discussion. After talking to the parents, the coordinator invites the teacher to share his or her thoughts and feelings after listening to the parents' reactions.

An effort was made to invite both of the child's parents to the CM (also when the parents were separated), based on our clinical experience that all too often, contact between the school system and the home is considered the responsibility of mothers only.

The collaboration model combines the normative approach embodied in Marte Meo (i.e., a model with distinct norms for what is right or wrong, for what promotes development or does not) and the more relative approach permitted by postmodern constructivist theories. The mixture proved to be of great value to the staff who carried out the intervention work; the normative approach was of importance in working directly with the child and his development, while in the CMs, the nonnormative approach was more appropriate and helpful in balancing and supporting the development of a constructive relationship between parents, teachers, and other helpers.

### AIM

The aim of the current study was to develop and evaluate the effectiveness of the collaboration model (i.e., coordination meetings plus MM interventions) as a tool for early detection and intervention in 4–12-year-old children with externalizing behavior problems at school.

### METHOD

#### Procedure

To evaluate the model, a quasi-experimental design was used with a nonrandomized comparison group that received whatever intervention schools in this area are usually offered. Collection of data was made at 2-year intervals because the main

purpose of the study was to study the long-term effects of the intervention. Because the willingness of the schools to allow several points of measurements was limited, we had to drop the posttreatment measures from the design. This decision was also justified by the evidence that only small, if any, changes in aggressive behavior are to be expected when no specific interventions are directed toward the problematic behavior (Wilson, 2003). Furthermore, the Marte Meo (MM) model aims to restore and build a supportive interaction between the adult and the child that will promote the child's development even after the intervention has been completed.

MM aims to enhance the teacher's ability to support children—in the current study, especially children with externalizing behavior—who will otherwise have a negative impact on the whole class's functioning. Because the MM aims to raise the competence of the teacher, and teachers of the same school often learn new strategies from each other, the overall competence might be raised in schools where MM was used. This aspect, in combination with this study's condition that the children not be pulled out of their ordinary school setting, made it impossible to randomize the children within the same school to the different intervention conditions.

The children in the intervention and comparison groups all came from municipal schools in the same county, with similar sociodemographic structures. The inclusion and exclusion criteria were the same for the intervention and comparison group. The inclusion criteria were: (1) age 4–12; (2) teacher's report of the child misbehaving to the pupils' welfare conference; (3) previous attempts to support the child had failed or produced negligible results; and (4) consent of parent(s) and teacher(s) to participate. The exclusion criteria were: (1) that a more extensive intervention had begun with a child and adolescent psychiatry service or a social welfare agency; and (2) the child or his or her parents could not communicate in Swedish.

*The intervention group.* A project organization was formed by 7 teachers and 2 school psychologists from the Department of Education, 2 social workers from the social welfare agency, and 2 psychologists from the child and adolescent psychiatric services. The 7 teachers had all completed specialist training in order to be qualified to work with children with special needs. In addition, they all had been given training in the MM model.

The intervention was added to whatever regular support had been offered in the school. If a decision was made that the collaboration model might be an appropriate intervention, consent to participate was requested from teachers and parents. Predata from the parents were collected by a research assistant during a home visit. When the predata from parents and teachers had been collected, the coordinator invited them to a first CM, and the MM interventions began thereafter. The child and teacher were filmed in different classroom situations. The video sequences were shown to the teacher and sometimes also to other members of the staff around the child. Based on the video analysis, the MM-trained teacher would discuss and, with the help of video clips, show in concrete detail the child's need of support. For example, the child might need help to develop a common focus with others, he or she might need more time and space to react to information or questions from the teachers, or he or she may need clear confirmation and approval when exhibiting socially acceptable behavior. From the tapes, it often became clear that the children had developed "larger signals" when they "misbehaved," while their socially accepted behavior, such as trying to follow instructions or making good contact, was less developed and hence easily missed in

day-to-day interaction in the classroom, both by teachers and peers. When this was shown and discussed by the supervisor, it became evident to the teachers how they could help the child. The supervisors showed video clips of the tape where the teachers' behavior was already supportive toward the child, and encouraged the teacher to exhibit more of this behavior. The videotapes were only used in the supervision of the teachers, not as a measurement of change.

A new coordination meeting was held after about 4 weeks in order to follow up the MM intervention and to explore the emerging new stories of the child, teacher, and parents. Usually at least two video films were taken, with reviews in between. The interventions were more intense in the beginning, with longer intervals between the meetings (6–8 weeks) at the end. The intervention concluded with a last coordination meeting, in which an evaluation of the participants' subjective experiences of the intervention was discussed. Postdata were collected 2 years after the onset of the intervention. The teacher ratings were completed by the child's current teacher. Because most of the children had shifted grades and teachers during the time between the start of the intervention and the follow-up rating, different teachers completed the pretreatment and posttreatment ratings. The intervention extended over an average period of 10 months, with a range of from 2 to 24 months. The average number of coordination meetings during this period was 7 (3–12), with 9 video recordings (3–22) and 6 reviews (2–16).

*The comparison group.* Nine schools in the same county as the schools of the intervention group (but from different towns to avoid diffusion of treatment effects) were asked to participate in the study. When a teacher in one of these schools reported to the pupils' welfare conference a child who fulfilled the inclusion criteria, the parents were asked to allow a research assistant to contact them to inform them about the study and ask them to participate. Once the parents agreed to take part in the study (all did), data were collected (similar to the intervention group) by a separate research assistant. Some of the comparison group schools were disinclined to let the teachers fill in the various measures because this took time from their regular work, and no alternative intervention other than the usual was offered to them. In the comparison group, therefore, teacher ratings had to be dropped.

## Subjects

The parents of 35 children were asked to participate in the intervention group. The parents of one child did not agree to participate in the study, so 34 children were included. One child was placed in a combined school and treatment setting before the first coordination meeting was held, and thus no intervention began. Of the remaining 33 cases, all were completed. The parents of 16 children gave their consent to participate in the comparison group. The age and gender of the children are shown in Table 1.

In the comparison group, 6 children were placed in special small-group education units; 4 were also supported by a personal pupil's assistant. Two children received support from a personal pupil's assistant, 3 children went to their ordinary classes but were provided special education in a special-education group, and 2 children were given special education in class. The remaining 3 did not receive any particular in-



TABLE 1  
Age and Gender of Participants

Age	Intervention Group <i>N</i> = 34		Comparison Group <i>N</i> = 16	
	Girls	Boys	Girls	Boys
Preschool and early school (4–8 years)	5	12	2	7
Middle school (9–12 years)	3	14	0	7

interventions aside from the usual extra support and attention that they received in their classes.

In the intervention group, three teachers were unwilling to complete the preratings of the Teachers Report Form (TRF), finding it too exhaustive and claiming that it took too much of their time; they did approve of filling in the Conners' Teacher Rating Scale (CTRS). Two teachers did not fill in the postratings, with a similar argument. In two cases, the family had moved and the parents were unwilling to let the new teacher complete the rating forms. There was a tendency for teachers of the older group of children to be less willing to fill in the forms (Fischer's Exact Test,  $p = .08$ ).

## Measures

To measure reduction in the children's symptoms, we used the following measures:

(1) The Child Behavior Checklist (CBCL), a part of the ASEBA (Achenbach System of Empirically Based Assessment) family of instruments (Achenbach & Rescorla, 2001). It is probably the most commonly used measure in research into children's behavior; (2) The Teacher's Report Form (TRF), also an ASEBA instrument, that corresponds to CBCL (Achenbach & Rescorla, 2001); (3) Conners' Parents Rating Scale (CPRS; Conners, 1973; Goyette, Conners, & Ulrich, 1978), which includes 10 items and has been proved reliable for the identification of hyperactive children; and (4) Conners' Teacher Rating Scale (CTRS; Conners, 1969), which measures the child's behavior problems in school.

## Data Analysis

*Statistical significance.* Because the sample size in some calculations was small and the rulings can be treated as ordinal data, mainly two-tailed nonparametric statistics (Wilcoxon signed-rank test, Fisher's exact test, and Mann-Whitney) have been used.

*Clinical significance and effect size.* As a measure of clinical significance, a method suggested by Webster-Stratton and colleagues has been chosen (Webster-Stratton, Hollinsworth, & Kolpacoff, 1989). This defines clinical significance as the proportion of subjects who have improved 30% or more above pretreatment scores. Effect sizes (ES) have been estimated using Cohen's  $d$  ( $d = [M_A - M_B]/SD$ ). Cohen has operationally defined values for small (.20), medium (.50), and large (.80) effect sizes (Cohen, 1992). Pre-post test ES for the comparison of the intervention and comparison group has also been computed, using the formula  $ES_{diff} = [M_{treat} - M_{comp}]/SD_{pooled}$

( $M_{\text{treat}}$  = differences pre and postratings in the intervention group,  $M_{\text{comparison}}$  = differences pre and postratings comparison group).

## RESULTS

### Statistical Significance

In the intervention group, significant reduction in pretest and posttest rating of children's symptom scores were found on the CBCL internalizing ( $p = .02$ ), externalizing ( $p = .01$ ), and total ( $p = .00$ ) scores. A trend was also found on the CPRS ( $p = .06$ ). A significant reduction was also found in pretest and posttest ratings on the TRF externalizing ( $p = .00$ ) and total ( $p = .00$ ) scores and on the CTRS ( $p = .00$ ). However, on the TRF internalizing syndrome scale, change was nonsignificant ( $p = .25$ ). There was no significant gender difference in the reduction of any of the symptom scores.

There were no significant changes in the comparison group on any of the children's symptom-related measures (CBCL: internalizing  $p = .97$ , externalizing  $p = .70$ , total score  $p = .73$ ; CTRS  $p = .58$ ). Descriptive statistics of the intervention and comparison groups are shown in Table 2.

As a whole, the comparison group changed for the worse, while the intervention group as a whole showed a significant reduction in symptom scores. The plots of interaction between the intervention and comparison groups on Z-transformed values on CBCL total score and CPRS are displayed in Figure 1. However, children in the comparison group varied greatly in outcome (i.e., 3 children improved more than 30%, while 4 children worsened 30% or more; CBCL total score). In a small group ( $N = 13$ ) such a dispersion has, of course, a strong influence on the results, and we were unable to show significant differences between the intervention and comparison groups results in terms of reduction of symptoms ( $p$  ranging from .15 to .38). A more appropriate measure may be the pre-post test effect sizes for the differences between the intervention and comparison groups, which on the CBCL total scores were .50, internalizing .52, externalizing .37, and on CPRS .50.

### Clinical Significance and Effect Size

A total of 50% of the subjects in the intervention group had a clinically significant symptom reduction on CBCL total score, compared with 23% for the comparison group. When compared with the Swedish normative mean (Larsson & Frisk, 1999) on CBCL total score, 53% of the children in the intervention group scored above two SD of the normative mean in their preratings, compared with 30% in the postratings. Corresponding figures for the comparison group were 50% and 54%, respectively. The clinically significant symptom reduction as measured with the Conners scales was also quite solid for the intervention group, 54% on mothers' ratings, compared with 33% for the comparison group.

The effect sizes in the intervention group were in the medium range on parents' pretest and posttest ratings on symptoms closely related to antisocial behavior (CBCL: externalizing  $d = .51$ , total score  $d = .62$ ; CPRS  $d = .53$ ). In the comparison group, the corresponding figures were close to zero (CBCL: externalizing  $d = .09$ , total score  $d = -.01$ ; CPRS  $d = .10$ ).

TABLE 2  
Descriptive Statistics Intervention Group (Intervention) and Comparison Group (Comparison)

Measure	Group	Pre-ratings					Post-ratings				
		N	Mean	SD	Median	Range	N	Mean	SD	Median	Range
CBCL Internalizing	Intervention	34	9.5	7.1	6.0	0-27	30	6.5	5.4	6.0	0-19
	Comparison	16	9.6	7.8	8.0	1-24	13	11.1	11.5	7.0	1-45
CBCL Externalizing	Intervention	34	19.3	10.1	18.5	4-53	30	13.9	11.1	12.5	1-42
	Comparison	16	17.9	9.5	15.5	4-35	13	17.0	11.2	15.0	2-35
CBCL Total Score	Intervention	34	45.1	23.1	47.5	13-123	30	30.9	22.8	25.5	2-87
	Comparison	16	46.0	24.7	41.5	10-91	13	46.2	32.0	53.0	4-105
CPRS	Intervention	33	11.2	7.5	10.0	0-28	28	7.4	6.8	7.0	0-30
	Comparison	15	13.0	6.7	13.0	6-26	12	13.8	10.1	14.0	2-33
TRF Internalizing	Intervention	30	11.9	7.3	10.0	4-37	29	10.8	8.5	9.0	0-38
	Comparison	30	34.9	11.0	34.5	9-56	29	23.7	15.1	22.0	0-57
TRF Externalizing	Intervention	30	78.6	21.3	78.0	45-135	29	58.4	34.4	61.0	0-143
	Comparison	30	78.6	21.3	78.0	45-135	29	58.4	34.4	61.0	0-143
TRF Total Score	Intervention	33	52.7	14.8	52.0	23-78	28	35.3	18.5	32.0	0-76
	Comparison	33	52.7	14.8	52.0	23-78	28	35.3	18.5	32.0	0-76

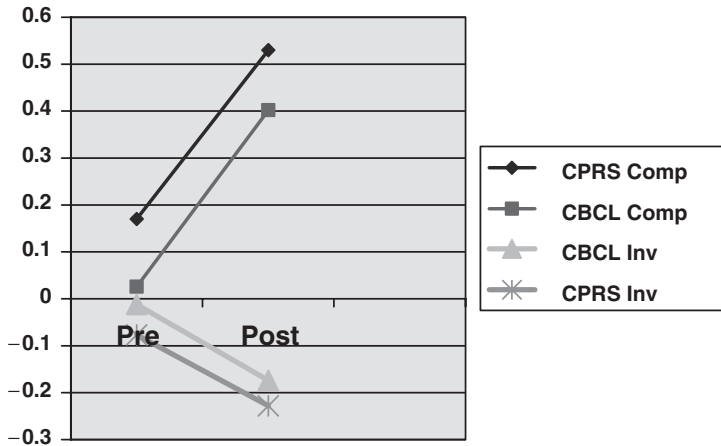


FIGURE 1 Pretest and Posttest Mean Z-scores on CBCL Total Score, and CPRS.

A total of 48% of the children in the intervention group had a clinically significant improvement on TRF total scores and 52% on CTRS. The teachers scored a significant decrease in symptoms closely related to antisocial behavior, with effect sizes ranging from medium to large (TRF: externalizing  $d = .85$ , total score  $d = .73$ ; CTRS  $d = 1.05$ )

**DISCUSSION**

We found a significant decrease in symptoms closely related to antisocial behavior in the intervention group in school and at home. No significant changes were found in the comparison group. We also found a clinically significant decrease of symptoms in 50%–54% of the children in the intervention group, compared with 23%–33% in the comparison group. The effect sizes were in the medium range in the intervention group, whereas they were close to zero in the comparison group. In the intervention group, the teachers also reported a clinically significant decrease of symptoms of around 50%, with the effect size ranging from medium to large. There were no dropouts once the intervention had begun.

We find the results of the present study promising. First, the results indicate that it is possible to promote sizable changes in a substantial subgroup of children who are described as hard to teach and hard to reach. The children in the study have been rated as having symptom loads on CBCL and CPRS quite comparable with various clinical groups (Botella, Hansen, Janzén, & Thunman, 1995; Kadesjö, 2000). Although a large number of children are still rated at a clinical level in the postratings, the direction of the change is clear because considerably more of the children are within the “normal” range in their postratings.

The pretest and posttest effect sizes indicate a rather strong result for our school-based intervention, compared with previous studies as summarized by Wilson (2003). Our findings are in line with the meta-analysis indicating no, small, or even negative changes in aggressive behavior when no specific intervention is made.

The significant decrease in symptoms at home and in school is noteworthy in view of the fact that other studies have found children’s behavior to be related to context,

and that improved behavior at school is not necessarily followed by improvement in other contexts (Scott, 2002; Webster-Stratton & Taylor, 2001). We can only speculate about whether this was a result of the more generalizing effect from an intervention at school on behavior at home than vice versa, or whether it was an effect of the systemic work conducted at the coordination meetings.

The Marte Meo model is a normative model that builds on knowledge from developmental psychology as to what behaviors promote child development. The principal elements of the supportive dialogues have, by and large, the same features as many of the techniques that have proved to be effective in parent training programs, such as the Incredible Years Series (i.e., establishing contact, following the child's lead, adjusting to the child's pace, sharing focus of attention, giving the child attention when she or he engages in a desired behavior, labeling behaviors, being specific in praise and commentaries; Webster-Stratton, 2000; Webster-Stratton & Taylor, 2001). However, an obstacle to the generalization of changes in the child's behaviors may be distrust or lack of communication between the different systems of which the child is a part. Bronfenbrenner (1979) denoted the immediate environment of the child microsystem. To ensure the overall growth of the child, it is important that the different microsystems (the family and the school) work together in a process that builds on two-way communication, exchange of information, and mutual trust (Bronfenbrenner, 1986, 1990). We interpret our results as indicating that by increasing the contact and the transparency between the family and school, through the co-construction of new stories during the coordination meetings, it is possible to pave the way for new behaviors and the generalization of effects between different microsystems.

It was noteworthy that there were no dropouts once the first coordination meeting had been held even though this was a multifaceted intervention of considerable length. This indicates that the model is practicable in various school situations. The combination of a more relative approach with a normative approach may have contributed to the lack of dropouts. Another vital aspect is that this is an intervention that builds on true collaboration between parents and the staff at the school. Besides the benefits for the particular child, this might contribute to changing the social system of the school (Weiss & Edwards, 1992).

### **Limitations and Suggestion for Future Research**

The results are promising, but there are some obvious limitations to the study. It is nonrandomized, which implies that the results should be taken cautiously. Another limitation is that only paper-and-pen measures have been used, which is not fully adequate for exploring and validating such a complex intervention as the present model. The findings also illuminate the need for long-term (i.e., 2 years) follow-up of larger comparison groups to make it possible to achieve control over the distribution in the outcome measures. Because various interventions will be offered to children in a treatment-as-usual group, the interventions will vary from none to exhaustive, and the outcome will probably vary accordingly. Hence, the next step should be a randomized controlled study in which a multimethod, multi-informant strategy would preferably be used. Because the MM method is based on video recordings, the method offers a possibility to use the videotapes not only in supervision but also as a measure of change. In a time-series design, independent observers could rate changes in

teachers' ability to support and promote the development of children and their management of difficult classroom situations.

The present study demonstrates that cooperation between researchers and clinicians can be fruitful. We believe that one factor that encouraged and supported the creative element was that both groups combined to work directly in the field in order to meet a very real challenge: that of antisocial behavior in children.

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