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The Effectiveness of an Experimental Treatment When Compared to Care as Usual Depends on the Type of Care as Usual

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In psychotherapy, effectiveness of an experimental treatment often is compared to care as usual. However, little if any attention has been paid to the heterogeneity of care as usual. The authors examined the effectiveness of manualized behavior therapy on school-aged disruptive behavior disordered (DBD) children in everyday clinical practice. A total of 77 DBD children (8-13 years) were randomly assigned to the Utrecht Coping Power Program (UCPP) condition or the care as usual condition. Care as usual consisted of family therapy (FT) or behavior therapy (BT). Decrease in parent-reported overt aggression was significantly larger in the UCPP condition than in the FT condition, but UCPP and BT did not differ significantly in this respect. The effect sizes of difference scores on other variables were more in favor of UCPP when compared to FT than to BT. The comparison of an experimental treatment to care as usual depends on the type of usual treatment.

**Keywords:** child psychotherapy; behavior therapy; methodology; disruptive behavior disorder; aggression
Oppositional defiant disorder (ODD) and conduct disorder (CD), according to the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994)—also called disruptive behavior disorders (DBDs)—are the predominant juvenile disorders seen in mental health services. During the 1950s and 1960s, the possibility of useful treatment was viewed pessimistically (Rutter, 1998), but more recently there have been advances in behaviorally oriented approaches to treatment (Kazdin, 2000b).

According to Brestan and Eyberg’s (1998) review of psychosocial treatments of children with antisocial behavior, several parent management training programs belong to the category of “well-established” treatments, whereas several cognitive-behavioral methods are judged as being only “probably efficacious.” Meta-analytical studies of parent management training by Serketich and Dumas (1996) and of cognitive-behavioral therapy by Bennett and Gibbons (2000) find that these interventions affect children with antisocial behavior positively. However, many studies involved in these meta-analyses were conducted under research conditions and are not representative of the treatment effectiveness in everyday clinical practice (Weisz, Weiss, Donenberg, & Han, 1995). Although recently some studies have shown that the above-mentioned behavioral methods conducted with children with antisocial behavior are also effective with young, referred DBD children (Scott, Spender, Doolan, Jacobs, & Aspland, 2001; Taylor, Schmidt, Pepler, & Hodgins, 1998), there is still a need to further demonstrate the effectiveness of these methods with older children in everyday clinical practice.

Therefore, we studied the effectiveness of an adjusted version of the Coping Power Program (CPP; Lochman & Wells, 1996) with care as usual as the control condition in DBD children aged 8 to 13 years. CPP has been developed to prevent delinquency and substance abuse in aggressive children. CPP consists of a cognitive behavior group therapy for children and a parent group training. Two studies have shown the preventive effects of CPP on delinquency and substance abuse (Lochman & Wells, 2002a, 2002b, 2003, 2004). We compared the effectiveness of an adjusted version of the CPP with an active control condition.

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Using an active care as usual control condition in which participants are provided with mental health services typically offered in the service setting has the greatest ecological validity of all common control conditions, with the greatest likelihood of corresponding to a real-world counterpart (Clarke, 1995). Moreover, this comparative treatment design is likely to be well tolerated in clinical settings and to overcome resistance on the part of clinical staff (Weisz, Weiss, & Donenberg, 1992). One methodological limitation of treatment as usual as a control condition may be the difficulty in replicating the study, specifically when treatment as usual consists of a conglomeration of many different elements of different treatments (Kazdin, 2000a).

The clinic staff, however, may be well trained in one or two specific treatment methods; comparing an experimental treatment with treatment as usual then can be a challenging test.

Little if any attention has been paid to the heterogeneity of care as usual. Indeed, care as usual may vary largely in the use of treatment methods and in the clinical staff’s level of training. Clinicians may have low levels of training and use eclectic and poorly defined methods, but they also may be well trained in the use of evidence based psychotherapeutic methods.

In the present study, we had the opportunity to explore the role of care as usual in the assessment of the effectiveness of an adjusted version of the CPP as it appeared that care as usual was very heterogeneous. We thus evaluated the effectiveness of an efficacious, manualized behavior therapy with referred DBD children by comparing it with two types of care as usual—family therapy and behavior therapy.

Method

Procedures

Children entering four child psychiatric outpatient clinics and three mental health centers during a period of almost 3 years (October 1996-August 1999) were allowed to participate in the study when they met the inclusion criteria. These children and their parents were then randomly assigned to either the adjusted version of the CPP condition or to the care as usual condition (C condition). The children and their parents did not know the identity of the treatment (i.e., experimental or regular); the study was introduced as an effect study on the treatment of DBD in general. The ethical committee of the University Medical Center Utrecht approved this study. Written informed consent from the parents was obtained.
Participants

Children were included if (a) they were 8 to 13 years of age, (b) they met the criteria for DBD in accordance with DSM-IV (American Psychiatric Association, 1994; comorbidity with other disorders was allowed), (c) they were living within a family (i.e., not in an institution), and (d) their intelligence was at least 80 based on the results of two subtests (Vocabulary and Block Design) of the Wechsler Intelligence Scale for Children–Revised (Vandersteene et al., 1986; Wechsler, 1974). The total study sample consisted of 77 children. In the Utrecht CPP (UCPP) condition, there were 38 children, and in the C condition, there were 39 children. These 77 children (68 boys and 9 girls) had a mean age of 10.1 years ($SD = 1.3$) and an average intelligence of 100.1 ($SD = 12.3$). All 77 children were DBD child psychiatric patients ($n_{ODD} = 68$, $n_{CD} = 9$). Clinical diagnoses of the participants were based on extensive diagnostic assessment (psychiatric interviews, psychological assessment of the child, interviews with the parents including discussion of the developmental history, and standardized information from the child’s teacher). On the basis of the information from these various informants, a board-certified child psychiatrist gave the clinical diagnosis. This clinical diagnosis was checked by the Diagnostic Interview Schedule for Children–Parent Version (DISC 2.3; Fisher, Wicks, Shaffer, Piacentini, & Lapkin, 1992) administered by a research assistant (when this check was done, the Dutch version of the DISC-IV was not yet available; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). To compare the DISC 2.3 results (which generates DSM-III-R scores; American Psychological Association, 1987) with the clinical diagnoses (based on the currently used DSM-IV psychiatric classification), a conversion was made in the scoring results of the DISC, based on the (old and new) criteria of the disorders. When the clinical diagnosis was compared to the converted DISC diagnosis, a correspondence of 94% was found related to DBD and of 82% related to attention deficit/hyperactivity disorder (ADHD).

Assessment

The effectiveness study had two points at which assessments were conducted: pretreatment and posttreatment (9 months later). Both times the same procedure was used. The parent or parents completed the questionnaires at home; they themselves asked their child’s teacher to fill in a teacher questionnaire. Ten research assistants, specifically trained in using the various instruments, administered the psychological assessment of the
child. These assessments were conducted in each of the individual facilities where the clients were originally identified.

**Measures of treatment outcome.** To sample problem behaviors in the home, behavioral ratings by parents were obtained through the Parent Daily Report (PDR; Chamberlain & Reid, 1987), which requires calling the parents 6 times in 2 weeks. During each phone call, the list of 34 specific behaviors was reviewed with the parent individually, and the parent was asked to indicate if any of the 34 items actually occurred during the previous 24 hours. The parent was not asked to provide frequencies, only occurrence or nonoccurrence. The measure yielded two scores (based on Conduct Problems Prevention Research Group, 1997): daily mean overt aggression (range 0-6, \(\alpha = .77\)) and daily mean oppositional behavior (range 0-6, \(\alpha = .85\)).

The parents completed the Child Behavior Checklist (CBCL; Achenbach, 1991b), which includes 118 items, each rated on a 0- to 2-point scale, and covering multiple symptom areas. The Externalizing Behavior scale was used, which reflects outward-directed problems (e.g., aggression or delinquency) during the past 6 months.

To evaluate child dysfunctioning at school, the children’s teachers completed the Child Behavior Checklist-Teacher Report Form (CBCL-TRF; Achenbach, 1991a). Again, the Externalizing Behavior scale was used.

**Other measures.** The educational level of the mother was assessed by the Beroepenklapper (Westerlaak, Kropman, & Collaris, 1975), with scores ranging from elementary education (1) to university (7).

The dosage of methylphenidate used by children comorbid with ADHD was registered.

**Treatment Conditions**

**UCPP.** The UCPP is an adaptation of the CPP (Lochman & Wells, 1996), a school-based preventive intervention program that includes a parent and a child component. Because the CPP is a preventive program of intervention, the UCPP needed to be adjusted for the more severely disturbed children and their parents. For example, the UCPP sessions were more varied, with proportionally fewer discussions and more activities to suit the short attention span of the children. In addition, the CPP child component consists of 33 weekly sessions during a 15-month period. Such a period is very long for use in everyday clinical practice. We therefore reduced the number of sessions
of the child component to 23 during a period of 9 months, whereas the number of sessions of the parent component was reduced from 18 to 15. The parental and the child components were not only combined, they were also integrated. This was accomplished in several ways. First, the same therapists were used for both the parental and the child groups. This made it easier to transfer the information on children’s achievements and progress to their parent or parents and reduced the risk that children would try to play the therapists and parents against each other. Second, to involve the parents in the child treatment, the last fourth of the parental meeting was devoted to the previous child session or sessions. Parents were given a summary of the child session or sessions, and the therapists explained the topics of the child session or sessions. In several parental sessions, some minutes of videotaped child sessions were also shown (e.g., anger management, each of the five problem-solving skills).

To ensure that these intervention components were provided as planned, procedures were formulated for developing and evaluating intervention integrity. Detailed manuals were used for both the UCPP parent component and the UCPP child component. Therapists (with a master’s degree in psychology but with limited clinical experience) received 6 months of training prior to the start of intervention and received weekly scheduled supervision of their intervention work. Moreover, all child and parent group sessions were videotaped for random selection by the supervisors (i.e., experienced clinicians) to check adherence to protocol. For the study, 3 therapists were trained, and they conducted 11 groups in each of the facilities where the clients were originally identified. Each therapist worked with a cotherapist who was a psychology student in training, so there were 2 therapists per group. The number of sessions was 32.97 ($SD = 8.77$).

**C condition.** Participants were provided with mental health services typically offered in each of the facilities. The decision about the type of treatment for each participant was made in staff meetings and was based both on clinical and pragmatic grounds (e.g., availability of therapists). The treatments in the C condition were divided into three groups: (a) family therapy ($n = 10$), (b) behavior therapy ($n = 16$), and (c) various other treatments (e.g., parental guidance, play therapy; $n = 13$). To divide the treatments into one of the three groups, charts were reviewed to identify the type of treatment, and type was checked with the therapist. Then, the types of treatment were categorized into one of the three groups. Family therapy was based on general systems theory (Watzlawick, Bavelas, & Jackson, 1967) and communication theory (Jackson, 1967). Family therapy was not
Family therapists were specifically trained (through courses and supervision by qualified supervisors across multiple years). Their mean years of experience with family therapy was 3.22 ($SD = 7.01$), and their mean years of experience of being a therapist in general was 10 ($SD = 6.93$). The number of the family therapy sessions was 11.20 ($SD = 6.29$).

Behavior therapy consisted of either manualized group social skills training for the child combined with manualized group sessions with the parents or nonmanualized individual treatment with the child and the parents. In both forms of behavior therapy, operant and cognitive procedures were combined. The behavior therapists were specifically trained (through courses and supervision by qualified supervisors across multiple years). Their mean years of experience with behavior therapy was 6.05 ($SD = 5.95$), and their mean years of experience of being a therapist in general was 10.6 ($SD = 7.57$). The number of the behavior therapy sessions was 17.75 ($SD = 13.93$). Other treatments varied to such an extent that they were not included in the analyses.

**Attrition**

A total of 77 families met the inclusion criteria, completed pretreatment assessments, and began treatment. Of these, 68 (88.3%) completed treatment. Of the 9 participants who terminated treatment early (i.e., they stopped treatment without mutual consent and did not receive further treatment before the second assessment), 4 were from the UCPP condition, and 5 from the C condition.

**Analyses**

An intention-to-treat strategy was followed; that is, all children (and families) who began treatment and attended at least one session were included regardless of whether they finished the treatment or not. To study the effect of treatment, we used repeated measures analyses of variance (ANOVA) with treatment condition as the between-subjects factor and time as the within-subjects factor. First, we compared UCPP ($n = 38$) to C ($n = 26$), consisting of participants in the family therapy and behavior therapy groups. Second, we compared UCPP to family therapy ($n = 10$) and UCPP to behavior therapy ($n = 16$). Because of the low numbers of participants in the family therapy and behavior therapy groups, we also tested treatment effectiveness in terms of effect sizes. The effect size statistic is an index of the magnitude and direction of therapy effects. Effect size is the difference
between the means of two sets of scores divided by the pooled standard deviation of the two sets (Cohen, 1988). The two set of scores consisted of difference scores, that is, the difference between pretreatment and posttreatment scores within each condition. The index $d$ is a measure of the degree to which the two sets differ in terms of standard deviation units. For example, a $d$ index of .25 indicates that the two means were separated by one fourth of a standard deviation. In general, an effect size of .80 is considered to be large, .50 moderate, and .20 small (Cohen, 1992).

**Results**

**Pretreatment**

At pretreatment, the UCPP condition and the C condition were compared across independent participant and demographic variables ($\alpha = .05$). The two groups on average did not differ on age, sex, intelligence, and educational level. Moreover, the use of medication, related to comorbidity with ADHD, was studied. Of the 64 children, 40 had ADHD: 22 children in the UCPP condition (58%) and 18 children in the C condition (69%), among whom were 7 children in the family therapy condition (70%) and 11 children in the behavior therapy condition (69%). The percentage of children with ADHD comorbidity was not different between the UCPP condition and the C condition, $\chi^2(1, N = 64) = 0.36, \text{ ns}$. A total of 31 children used medication: 16 in the UCPP condition and 15 in the C condition ($n_{\text{family therapy}} = 5$, $n_{\text{behavior therapy}} = 10$). Of them, 28 used methylphenidate: 14 in the UCPP condition and 14 in the C condition ($n_{\text{family therapy}} = 5$, $n_{\text{behavior therapy}} = 9$).

Comparing the two conditions, the children using methylphenidate did not differ in their dosage of medication ($M_{\text{UCPP}} = 22.31 \text{ mg, } SD = 8.32; M_{\text{Control}} = 21.31 \text{ mg, } SD = 5.45; F = 1.31, p < .27$). Also, comparing the three conditions, the children using methylphenidate did not differ in their dosage of medication ($M_{\text{UCPP}} = 22.31 \text{ mg, } SD = 8.32; M_{\text{family therapy}} = 23.75 \text{ mg, } SD = 6.29; M_{\text{behavior therapy}} = 20.22 \text{ mg, } SD = 5.04; F = 0.41, p < .67$). We compared the participants in the UCPP condition and C condition at pretreatment on the outcome measures (PDR, CBCL, TRF; $\alpha = .05$). No significant differences were found. We also compared the participants in the UCPP condition, the family therapy condition, and the behavior therapy condition at pretreatment on participant and demographic variables (age, sex, intelligence, educational level) and on the outcome measures (PDR, CBCL, TRF; $\alpha = .05$). No significant differences were found.
Behavior Modification

Effectiveness of Treatment: Between-Group Comparisons

The means of the pre- and posttreatment outcome variables in the UCPP condition and the C condition are presented in Table 1. The interaction effect between treatment condition and time in each ANOVA is the test for the relative effectiveness of the interventions. For the PDR overt aggression, there was a significant effect of time, $F(1) = 22.86, p < .0001$, and a significant effect of treatment condition by time interaction, $F(1) = 4.16, p < .05$. For the PDR oppositional behavior, there was a significant effect of time, $F(1) = 12.79, p < .002$, but no effect of treatment condition by time interaction. For the CBCL Externalizing Behavior, there was a significant effect of time, $F(1) = 32.76, p < .0001$, but no effect of treatment condition by time interaction. For the TRF Externalizing Behavior, there was a significant effect of time $F(1) = 6.37, p < .02$, but no effect of treatment condition by time interaction.

The means of the pretreatment and posttreatment outcome variables in the UCPP condition and the family therapy condition are presented in Table 2. For the PDR overt aggression, there was a significant effect of time, $F(1) = 4.70, p < .04$, and a significant effect of treatment condition by time interaction, $F(1) = 7.02, p < .02$. For the PDR oppositional behavior, there were no significant effects of time or of treatment condition by time interaction. For the CBCL Externalizing Behavior, there was a significant effect of

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**Table 1**

Means and Standard Deviations of Outcome Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Utrecht Coping Power Program&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Control Group&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Parent Daily Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overt aggression</td>
<td>2.90 (1.51)</td>
<td>1.90 (1.38)</td>
</tr>
<tr>
<td>Oppositional behavior</td>
<td>3.14 (1.31)</td>
<td>2.30 (1.40)</td>
</tr>
<tr>
<td>Child Behavior Checklist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Externalizing Behavior</td>
<td>74.58 (6.40)</td>
<td>69.61 (8.41)</td>
</tr>
<tr>
<td>Teacher Report Form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Externalizing Behavior</td>
<td>64.89 (9.91)</td>
<td>62.42 (10.71)</td>
</tr>
</tbody>
</table>

<sup>a</sup> $n = 38$.
<sup>b</sup> $n = 26$. 

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Table 2
Means and Standard Deviations of Outcome Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Utrecht Coping Power Program(^a)</th>
<th>Family Therapy(^b)</th>
<th>Behavior Therapy(^c)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
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<td>M</td>
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<td>Externalizing Behavior</td>
<td>64.89</td>
<td>(9.91)</td>
<td>62.42</td>
</tr>
</tbody>
</table>

\(^a\) n = 38.

\(^b\) n = 10.

\(^c\) n = 16.
time, $F(1) = 16.33$, $p < .0001$, but no effect of treatment condition by time interaction. For the TRF Externalizing Behavior, there were no significant effects of time or of treatment condition by time interaction.

The means of the pretreatment and posttreatment outcome variables in the UCPP condition and the behavior therapy condition are presented in Table 2. For the PDR overt aggression, there was a significant effect of time, $F(1) = 23.40$, $p < .0001$, but no effect of treatment condition by time interaction. For the PDR oppositional behavior, there was a significant effect of time, $F(1) = 10.70$, $p < .003$, but no effect of treatment condition by time interaction. For the CBCL Externalizing Behavior, there was a significant effect of time, $F(1) = 24.90$, $p < .0001$, but no effect of treatment condition by time interaction. For the TRF Externalizing Behavior, there was a significant effect of time, $F(1) = 8.59$, $p < .006$, but no effect of treatment condition by time interaction.

Effect sizes based on difference scores (pretreatment – posttreatment) between the UCPP condition on the one side and family therapy and behavior therapy on the other side are presented in Table 3. On PDR overt aggression and PDR oppositional behavior, the effect sizes between UCPP and family therapy in favor of UCPP were moderate to large (0.61 and 1.07), whereas effect sizes between UCPP and behavior therapy in favor of UCPP were small (0.24 and 0.19). On CBCL Externalizing Behavior, effect sizes were very small. On TRF Externalizing Behavior, the effect size between UCPP and family therapy in favor of UCPP was small (0.37), whereas the effect size between UCPP and behavior therapy was small as well (−0.29) but in favor of behavior therapy.

**Discussion**

In psychotherapy effectiveness research, little attention has been paid to the heterogeneity of care as usual as an active control condition. In the present study, we had the opportunity to explore the role of care as usual as it appeared that care as usual was heterogeneous. We evaluated the effectiveness of an adaptation of an efficacious manualized behavior therapy (i.e., UCPP) with referred DBD children by comparing it with two types of care as usual (i.e., family therapy and behavior therapy).

The decrease in PDR overt aggression was significantly larger in the UCPP condition than in the C condition. Specifically, the decrease in PDR overt aggression was significantly larger in the UCPP condition than in the family therapy condition, but UCPP and behavior therapy did not differ significantly in the decrease of PDR overt aggression. Because of small
samples, effect sizes were computed between UCPP and the two types of care as usual; the effect sizes were based on the difference between pre-treatment and posttreatment scores in each condition. The effect size between UCPP and family therapy in favor of UCPP on PDR overt aggression was large, and the effect size between UCPP and family therapy in favor of UCPP on PDR oppositional behavior was moderate to large. The effect sizes between UCPP and behavior therapy in favor of UCPP on both PDR variables were small. Thus, the comparison of UCPP to care as usual on two behavioral ratings at home depended on the type of usual treatment given. This was even clearer in the results of the TRF Externalizing Behavior: The effect size between UCPP and family therapy was small and in favor of UCPP, whereas the effect size between UCPP and behavior therapy was small but in favor of behavior therapy. Finally, the effect sizes between UCPP and family therapy or behavior therapy on CBCL Externalizing Behavior were very small. However, in contrast to the PDR, in which very specific information is gathered within a small time window, the information obtained in the CBCL is more global. The PDR for this reason is considered as a more accurate instrument to measure outcome than the CBCL.

Some limitations should be considered when interpreting the results. First, the absence of information about participant refusals limits the generalizability of the study. Second, the number of therapy sessions was not equated across the three groups, leaving open the confound of treatment intensity vis-à-vis treatment content. Third, the sample sizes for family therapy and behavior therapy were low.

<table>
<thead>
<tr>
<th>Intervention Effect: Effect Sizes of Between-Group Analysis of Mean Improvement of Outcome Measures</th>
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<tr>
<td></td>
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<tr>
<td>Program—Family therapy</td>
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<tr>
<td>Program—Behavior therapy</td>
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Note: A positive value indicates a larger improvement (e.g., decrease in symptoms) of the first group compared to the second group.
The study showed that in psychotherapy effectiveness research, one should pay attention to the type of care as usual given. The type of usual treatment may greatly vary among different countries and within countries and among different regions, with respect to both the type of treatment and the therapists’ level of training and experience. The present study suggests that in the treatment of DBD children in everyday clinical practice, manualized behavior therapy given by specifically trained but clinically inexperienced therapists was more effective when compared to family therapy than to behavior therapy, given by well-trained and experienced psychotherapists.

References


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Peggy T. Cohen-Kettenis, PhD, is a registered clinical psychologist and psychotherapist and head of the Department of Medical Psychology of the VU University medical center (VUmc), Amsterdam. She is also director of the Gender Dysphoria Knowledge Center. Her main areas of research are psychosexual development, gender identity disorders, and gender-related psychopathology.

Gerard H. Maassen, PhD, is an associate professor in the Department of Methodology and Statistics, Faculty of Social Sciences, Utrecht University. His current research interests include problems of structural equations modeling, the assessment of (reliable) change, and the determination of sociometric status. His recent key publications appeared in Psychometrika, Behavior Research and Therapy, Sociological Methods and Research, and Merrill-Palmer Quarterly.

John E. Lochman, PhD, ABPP, is a professor and Doddridge Saxon Chair of Clinical Psychology at the University of Alabama and is adjunct professor of psychiatry and behavioral sciences at Duke University Medical Center. His research interests are in the areas of risk factors for youth antisocial behavior, social cognitive processes in aggressive children and their families, and research on preventive and clinical interventions for aggressive and conduct problem children.

Herman van Engeland, MD, PhD, has been a registered psychiatrist since 1974, and he obtained his registration as a child and adolescent psychiatrist in 1976. On November 1, 1984, he became professor of child and adolescent psychiatry and chairman of the Department of Child and Adolescent Psychiatry, University Medical Center Utrecht.