

ANGER MANAGEMENT INTERVENTIONS

John E. Lochman, Nicole R. Palardy, Heather K. McElroy, Nancy Phillips, and Khiela J. Holmes
The University of Alabama

Two anger management interventions for aggressive children, Anger Coping and Coping Power, are described in this review article, including conceptual underpinnings, session format and content, and outcome research findings. Important issues and considerations in the implementation of such interventions are also presented. Overall, Anger Coping and Coping Power have emerged as effective interventions for angry, aggressive children and represent useful resources for clinicians' work with this population.

CONTEXTUAL SOCIAL-COGNITIVE MODEL OF ANGRY AGGRESSION

The social-cognitive model serving as the conceptual framework for the Anger Coping Program and the Coping Power Program began as a model of anger arousal (Lochman, Nelson, & Sims, 1981). In this conceptualization of anger arousal, which stressed sequential cognitive processing, the child responded to problems such as interpersonal conflicts or frustrations with environmental obstacles (e.g., difficult schoolwork). However, it was not the stimulus event itself that provoked the child's anger and response, but rather the child's cognitive processing of and about that event. This first stage of cognitive processing (appraisal) consisted of labeling, attributions, and perceptions of the problem event, and of the child's subsequent anger. The second stage of processing (problem solution) consisted of the child's cognitive plan for his or her response to the perceived threat or provocation. This early anger arousal model indicated that the child's cognitive and emotional processing of the problem event and of his or her planned response led to the child's actual behavioral response and to the positive or negative consequences that the child experienced as a result. Our current Contextual Social-Cognitive model (Lochman & Wells, 2002a) includes a more comprehensive understanding of social-cognitive processes, maintains an emphasis on anger arousal, and includes recognition of the contextual factors which contribute to children's aggression.

Social cognition.

The current social-cognitive model of children's aggression (Lochman, Whidby, & Fitzgerald, 2000) underlying the child component of the Coping Power program evolved in large part because of research on aggressive children's social information-processing (Crick & Dodge, 1994). At the appraisal stage of processing, aggressive children

have been found to recall fewer relevant cues about events (Lochman & Dodge, 1994), and to selectively attend to hostile rather than neutral cues (Gouze, 1987; Milich & Dodge, 1984). Aggressive children have been shown to have a hostile attributional bias, as they tend to excessively infer that others are acting toward them in a provocative and hostile manner (Katsurada & Sugawara, 1998; Lochman & Dodge, 1994, 1998).

At the problem solution stage of social-cognitive processing, aggressive children offer fewer competent verbal problem solutions (Dunn, Lochman, & Colder, 1997), including verbal assertion and compromise solutions (Joffe, Dobson, Fine, Marriage, & Haley, 1990; Lochman & Dodge, 1994; Lochman & Lampron, 1986), and more aggressive and direct action solutions (Lochman & Lampron, 1986; Pepler, Craig, & Roberts, 1998; Waas & French, 1989) to hypothetical vignettes describing interpersonal conflicts. Aggressive children cognitively generate more aggressive strategies in part because they expect that aggressive behavior will lead to desired outcomes (Lochman & Dodge, 1994; Zelli, Dodge, Lochman, Laird, & The Conduct Problems Prevention Research Group, 1999).

Anger arousal.

Anger is defined as an emotional response to situations that are perceived as threatening or offensive to oneself or others close to them (Lazarus, 1991). Anger can prove adaptive in that it is a motivator for action and tends to focus one's

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resources toward the threatening or offensive event (Goleman, 1995). Anger is a key element in the natural “fight or flight response” and provides mobilizing arousal to “attack” the source of the threat. However, people have difficulty controlling the emotion of anger, and intense and uncontrolled anger is related to aggression and conduct problems including Conduct Disorder (Lochman, Dunn, & Wagner, 1987).

Because anger is a key component of the “flight or fight” response, physiological correlates of anger are expected. The literature indicates clear physiological response to emotional arousal, and more specifically to anger. The physiological response research suggests that anger is indeed a response to perceived threatening stimuli, and response varies with the individual’s appraisal of the situation. Heart rate and blood pressure are two typically measured physiological responses in the study of anger arousal. Angry, aggressive children tend to have lower resting heart rates and higher heart rate reactivity to anger-provoking stimuli (Raine, Reynolds, Venables, & Mednick, 1997; Scarpa & Raine, 1997). Elevated resting blood pressure levels and high reactivity to stress have been paralleled to an angry, hostile, “Type A” temperament in adults as well as children (Pine et al., 1996).

Contextual influences. A variety of contexts affect children’s behavior and social competence, including the family environment, the peer context, and the neighborhood context. Of these, parenting practices have particularly robust effects on children’s behavior. Parental physical aggression, such as spanking and more punitive discipline styles, relate to later oppositional and aggressive behavior in both boys and girls (Stormshak, Bierman, McMahon, Lengua, and The Conduct Problems Prevention Research Group, 2000). Low parental warmth and involvement also significantly predicts physically aggressive punishment practices (Stormshak et al., 2000). Weiss, Dodge, Bates, and Petit (1992) found that ratings of the severity of parental discipline were positively correlated with teacher ratings of aggression and behavior problems. In addition to higher aggression ratings, children experiencing harsh discipline practices exhibited poorer social information processing even when controlling for the possible effects of socioeconomic status, marital discord, and child temperament.

These results suggest that uninvolved and cold parents tend to be more aggressive in their punishment practices resulting in more aggressive and/or oppositional children with poorer information processing skills. It is important to note that although such parenting factors are associated with childhood aggression, it is possible that child temperament and behavior may also have some effect on parenting behavior. Such evidence indicates the probable bi-directional relation between child and parent behavior.

Poor parental supervision behaviors have also been associated with child aggression. Haapasalo and Tremblay (1994) found that boys who fought more often with their peers reported having less supervision and more punishment than boys who did not fight. Interestingly, the boys who fought reported having more rules than the boys who did not fight, suggesting the possibility that parents of aggressive boys may have numerous strict rules that are difficult to follow.

THE ANGER COPING AND COPING POWER PROGRAMS

Based on this contextual social-cognitive model, we have developed two anger management programs: the Anger Coping Program and the more recent Coping Power Program. In this section we will provide a brief overview for each program, and will briefly review the empirical support for these programs.

Anger Coping

Format and target population. Anger Coping is a cognitive-behavioral group intervention designed to reduce aggressive and disruptive behaviors by enhancing children’s abilities to cope adaptively with difficult situations and feelings (Larson & Lochman, 2002; Lochman, FitzGerald, & Whidby, 1999). The program was developed for implementation in the school setting with fourth- to sixth-graders, though it can be adapted for a younger or older group. Groups typically consist of four to six children identified by school personnel as demonstrating problems with aggression, anger control, or other disruptive behaviors. To benefit from the program, children should demonstrate awareness of the problematic nature of their behavior and a desire to make changes. Children who are more rejected by their peers, demonstrate extremely poor problem-solving skills, and have lower levels of perceived hostility demonstrate the most improvement after participation

in Anger Coping (Lochman, Lampron, Burch, & Curry, 1985). Other positive prognostic indicators include an internalized attributional style, anxiety symptoms, and somatic complaints.

The sessions are led by two co-leaders, one of whom is typically based at the school (e.g., a school counselor or psychologist) while the other may be employed by a mental health center or clinic. Credentials of group leaders are typically an advanced degree in social work, counseling, or clinical psychology. Other qualifications include experience working with children in groups and specific experience with aggressive and disruptive children.

Program content.

The complete Anger Coping Program consists of 18 sessions, approximately one hour in length, that incorporate didactic explanations, group discussions, and in-session activities such as role-plays and games. Multiple opportunities for rehearsal and refinement of skills are incorporated into the sessions. In addition, a daily goal sheet is used for monitoring target behaviors between sessions and to help the children generalize skills learned in group to other settings (e.g., home and the classroom).

Outcome research.

Evaluation of the Anger Coping Program has included pre-post assessments, longer-term follow up effects, and comparison of program participants and comparison groups. Overall, the results support the efficacy of the program, demonstrating that program participants display reductions in disruptive and aggressive behavior and improvements in self-esteem and social-cognitive skills. Preventative effects on adolescent substance use have also been demonstrated.

Pre-post effects.

In an early study of the Anger Coping Program, aggressive boys were randomly assigned to one of four groups: a 12-week Anger Coping intervention, goal setting, Anger Coping plus goal setting, or untreated control (Lochman, Burch, Curry, & Lampron, 1984). In post-treatment evaluation, study participants who received the Anger Coping Program displayed less parent-reported aggression, lower rates of disruptive classroom behavior, and tended to have higher levels of self-esteem. A

subsequent study compared the 12-session version of Anger Coping with an augmented 18-session program which included more emphasis on perspective taking, role playing, and problem solving (Lochman, 1985). The extended program was found to produce greater improvements in on-task behavior as well as greater reductions in off-task behavior, demonstrating the benefit of a longer intervention period for aggressive children.

Two additional controlled studies of the 18-session Anger Coping Program have replicated the above findings, demonstrating reductions in aggressive behavior, reductions in off-task classroom behavior, and improvements in self-perceived social competence and self-esteem (Lochman & Curry, 1986; Lochman, Lampron, Gemmer, Harris, & Wyckoff, 1989). However, neither the addition of a five-session teacher consultation component nor a self-instruction training component focusing on academic tasks enhanced the program effects.

Longer-term effects.

Three studies have examined the longer-term effects of Anger Coping. Seven months after completion of the 12-session Anger Coping Program, boys who participated in the intervention continued to display improvements in on-task classroom behaviors and reductions in off-task behaviors, compared to untreated peers (Lochman & Lampron, 1988). After one year, children who were both aggressive and rejected by their peers prior to participating in Anger Coping demonstrated sustained reductions in both peer-rated and teacher-rated aggressive behaviors (Lochman, Coie, Underwood, & Terry, 1993). In a study of the longer-term and preventative effects of Anger Coping, participants were contacted three years after completing the program, when they were an average age of 15 years old (Lochman, 1992). These boys had maintained gains in self-esteem and problem-solving skills, and demonstrated lower levels of alcohol, marijuana, and other drug use in comparison to boys in an untreated control condition. In terms of social-cognitive functioning and adolescent substance use, the Anger Coping participants were in the range of a nonaggressive comparison group. However, significant reductions in delinquent behavior were not found at follow-up, and post-treatment reductions in off-task behavior and parent-reported aggression were maintained only for a subset of boys who had received a six-session booster

intervention in the school year following their participation in Anger Coping.

Results of outcome research on Anger Coping, as well as new developments in the understanding and treatment of childhood aggression, have led to the development of a more intensive, multicomponent intervention for aggressive children, Coping Power, which is described in the following section.

COPING POWER

Format and target population. The Coping Power Program is an extension of Anger Coping, lengthening the program to 34 group sessions and incorporating periodic individual contacts and a 16-session parent group component (Lochman, Lenhart, & Wells, 1996). The program targets children who demonstrate aggressive or other disruptive behaviors, which place them at risk for later adolescent substance abuse, delinquent behavior, and poor school adjustment. The program typically spans two grades, ideally beginning in the latter half of fifth grade and continuing through the end of sixth grade, providing intervention during the critical transition period to middle school. Groups of four to six children are held in the school setting, led by two co-leaders with advanced training and experience administering behavioral interventions to children.

Coping Power is an indicated prevention intervention, designed to interrupt developmental trajectories toward antisocial outcomes for children who are at-risk based on an empirically derived set of risk factors. These risk factors include: (1) a lack of social competence and inability to get along with other children, (2) deficits in self-regulation, self-control, and impulse control, (3) weak social bond with the school and academic failure, and (4) problems in the parent-child relationship including inconsistent discipline and a lack of parental warmth and involvement. The Coping Power child and parent interventions are directed toward improving each of these areas.

Program content.

The Coping Power child component consists of structured cognitive-behavioral group sessions that target characteristic social-cognitive difficulties demonstrated by aggressive children. These include increased attention to hostile cues, a tendency to interpret others' intentions as hostile, an orientation

toward dominance in social goals, over reliance on action-oriented problem-solving strategies and a relative deficit in the use of verbal assertion or negotiation, and a belief that aggressive behavior will result in personal gratification. Using a variety of instructional strategies and activities, the Coping Power child component is designed to specifically address these problems and to help children develop more adaptive skills. Topics addressed include goal setting, organizational and study skills, awareness of arousal and anger, self-regulation of anger and arousal, and social problem solving. Contextual risk factors in relationships with deviant peers and problems within the neighborhood are also addressed. Individual contacts are made on a monthly basis to increase generalization of the program content to the child's actual experiences and to develop and maintain a positive working relationship between the child and group leaders.

The Coping Power parent component aims to improve the parent-child relationship and facilitate effective parenting practices. The content, derived from social learning theory-based parent training programs, includes rewarding appropriate child behaviors, the use of effective instructions and rules, applying effective consequences for inappropriate child behaviors, constructive family communication practices, and parental stress management. In addition, parents are introduced to the skills their children are learning so that they can identify, coach, and reinforce their children's use of the skills. A subsequent section of this paper will outline the Coping Power parent and child components in greater detail.

Outcome research.

Evaluation of the Coping Power program includes studies currently in progress, as well as several completed studies. Available outcome results provide support for the program's efficacy in reducing child behavioral problems and preventing future substance use. In the first of these studies, aggressive boys were assigned to one of three conditions: Coping Power child component only, Coping Power child and parent components, or an untreated control group (Lochman & Wells, in press-a). At one-year follow-up, boys who had participated in the full Coping Power Program had lower rates of covert (theft, property damage) delinquent behavior though there were no differences between either Coping Power condition and control on overt (e.g.,

assault, robbery) delinquent behavior. In regard to substance use, boys in both Coping Power conditions had lower parent-reported rates, though the effects were stronger when both child and parent components had been delivered. Similarly, boys in both Coping Power conditions demonstrated greater teacher-reported behavioral improvement compared to controls, with boys who received the full program showing the most positive change. Further evaluation of outcome data indicates that the Coping Power intervention leads to changes in targeted social-cognitive processes which in turn lead to reductions in antisocial behavior (Lochman & Wells, 2002a).

A second study of the Coping Power program examined whether the addition of a universal preventive intervention, consisting of teacher in-services and parent meetings, would enhance program outcome effects (Lochman & Wells, 2002b). Post intervention analyses demonstrated that Coping Power alone resulted in significant reductions in proactive aggressive behavior and improvements in teacher-reported behavior and social competence, and tended to increase parental warmth and supportiveness in interactions with children. Coping Power, combined with the universal intervention, produced more pronounced improvements in perceived social competence and teacher-rated problem-solving abilities and anger coping skills. At one-year follow-up, children who had participated in Coping Power reported significantly lower rates of substance use and delinquent behavior, compared to the untreated control group (Lochman & Wells, in press-b). In addition, children who had received both Coping Power and the universal intervention had significantly lower levels of teacher-reported aggressive behavior at one-year follow-up.

Two other grant-funded projects are in progress. One is evaluating a 24-session version of the program that incorporates a follow-up booster intervention, along with a 10-session parent component, and teacher consultation and training. The description of the Coping Power Program in the following sections is based on this version of the program. The other current project is a dissemination project in which the program is implemented entirely by school personnel who have received training by program staff.

COPING POWER PROGRAM: CHILD COMPONENT

Each Coping Power child session follows the same general format, and there are common activities across all sessions. After Session 1, each session begins with a review of the main points from the previous session and of the children's progress toward a behavioral goal, which is individually selected for each child with input from the teacher. Reviewing the goal sheets during group gives the children an opportunity to discuss any problems they may have had with accomplishing their goals and the leaders can help them brainstorm solutions. At the end of each session, leaders assign any homework and each child identifies one positive thing about himself or herself and one positive thing about another group member. Afterwards, the children must answer a question pertaining to self-control before being able to select from the prize box. If time permits, the children have free time, which provides an opportunity to practice problem-solving strategies if any conflicts arise.

Session 1. The goal of this session is to establish the structure of the group through explaining the purpose of the group and setting rules for the group. The children engage in a group activity to enable them to become acquainted with one another. During this session, the co-leaders also explain the point system, prizes, and the idea of behavioral goal setting to the children.

Session 2. During this session, the leaders revisit the idea of goal setting and illustrate the difference between long-term and short-term goals. Each child identifies a long-term goal and related short-term goals to work on while the program is in effect. The short-term goals will serve as the children's weekly goals. Leaders work with the children to define their goal in clear behavioral terms to minimize the level of subjectivity.

Session 3. This session focuses on teaching the children to become aware of feelings of anger and arousal. This is accomplished through using a thermometer to assist the children in understanding varying levels of anger. The children also identify their personal triggers for angry feelings.

Session 4-6. During these sessions, the leaders introduce the children to methods for anger coping and self-control. Specifically, the leaders

discuss coping with the feelings experienced as a result of being teased. The children are taught to use distraction and coping self-statements to deal with their anger. These sessions include a variety of activities to allow the children to practice the coping strategies.

Session 7-8. During these sessions, the leaders teach the children breathing exercises as a method of self-control and have the children list some ways that they can calm themselves down. The children also discuss obstacles to using coping statements and ways to overcome them. The leaders discuss perspective taking and the difficulty of deciphering others' intentions by observing their behavior.

Session 9-12. These sessions include discussions and activities centered on applying a problem-solving model, the Problem Identification, Choices, and Consequences (PICC) model, to effectively handle problematic social encounters. Children also learn that solutions generated when one thinks before responding are better than those generated automatically. Problem-solving etiquette, which includes appropriate times to approach others to solve problems, is also discussed.

Session 13-15. In these sessions, children create a video using the PICC model, which serves to reinforce the social problem-solving process. The children create a script with alternate solutions to the problem and the consequences of those solutions. If the children agree, the leaders have the option of showing this video during the parent groups.

Session 16-21. These sessions focus on applying social problem-solving to teacher conflict, making friends and group entry, negotiation with peers, and neighborhood problems. In addition, leaders define peer pressure and conduct role-plays to demonstrate refusal skills. They also address children's involvement with deviant peer groups. The children create a poster to encourage them to resist peer pressure and join positive peer groups.

Session 22. During this session, the children list their strengths and positive qualities and the leaders illustrate how this will assist in joining positive peer groups.

Session 23. During this session, the leaders review the Coping Power information with the

children and reemphasize the idea of the children being positive influences on other children. Leaders also inform the children that they may be contacted for booster sessions the following year.

Session 24. This is the termination session and the end of the year party.

COPING POWER PROGRAM: PARENT COMPONENT

The Coping Power parent intervention consists of ten parent group sessions, paralleling the same seven-month intervention period as the child component. The parent intervention is typically administered in groups of five to ten single parents and/or couples, and groups usually meet at the child participants' schools. Groups are led by the same two Coping Power staff persons that lead the child component. Assertive attempts are made to promote parent attendance (Lochman & Wells, 1996), including reminder phone calls and flyers taken home by the children.

Orientation to parent training.

In the first parent group session, an orientation to parent training is provided. This includes explaining why the transition to middle school may be stressful and how this program can help. Often school-parent relationships are strained due to the fact that the most frequent contacts with school personnel are related to their child's negative behavior. Thus, the importance of setting up a regular parent-teacher conference is stressed, and parents are given handouts that include sample questions they could ask their child's teacher to better understand their classroom rules and teaching style. Parents are also provided with sample goal sheets that their child is using at school, to become acquainted with the intervention's emphasis on daily teacher monitoring of a target goal. Finally, parents receive several handouts about establishing a good homework routine for their child. These handouts aid in describing why teachers give homework, give steps to establishing a homework routine, provide a sample homework contract between a parent and a child, and offer a sample homework tracking form for the teacher to sign.

Stress management.

Sessions 2 and 3 help to establish rapport with parents by focusing on their stress and by

offering methods to help alleviate it. While a general definition of stress is given, there is particular focus on the stress involved in parenting and how it can impact their ability to parent effectively. The importance of parents setting aside time to “take care of themselves” is introduced and parents are asked about their own ideas about how to operationalize that concept. Then, active relaxation training is introduced and the group leaders guide the parents through an active muscle relaxation exercise. In addition, the idea that cognitions about one’s child can contribute to parenting stress and irritable overreactions is introduced and parents give examples of dysfunctional cognitions associated with parenting. Homework focuses on practicing relaxation, implementing procedures for “taking care of oneself,” and catching and modifying dysfunctional cognitions when they occur.

Social Learning Theory.

Session 4 focuses on presenting social learning theory principles in lay language including the concepts of positive and negative consequences for child behavior. An A-B-C (Antecedents-Behavior-Consequences) chart is explained and parents are asked to provide typical examples of what usually happens immediately before and after their child exhibits a problem behavior. The use of the A-B-C chart is designed to facilitate maintenance over time as well as to promote generalization of parenting skills learned in session to the home environment. If parents can learn the principles underlying the use of behavioral strategies, it is more likely that such generalization and maintenance will occur (McMahon & Forehand, in press). In addition, group leaders discuss the specific skills of labeled and unlabeled praise in this session, and parents receive a chart identifying a list of negative behaviors and accompanying positive behaviors. This facilitates parental recognition of the positive prosocial behaviors that they can practice labeling with praise. Strengthening the child-parent bond is also discussed in the context of allowing special time for the child. The group ends with a homework assignment to practice using praise for prosocial child behaviors at home through the use of a behavior tracking chart, and to chart special time spent together with their child.

Ignoring and giving good instructions.

In Session 5, parents first learn how to ignore minor negative behaviors when they occur. There is a great deal of discussion of minor behaviors that can be ignored versus more serious misbehaviors that should not be ignored. Group leaders model ignoring through role-plays, and parents are invited to participate in similar role-plays with each other as well. In particular, the role-plays are used to demonstrate how easily parents can get “pulled into” an argument with an escalation in tone and volume. Parents are provided with handouts related to ignoring and are asked to identify at least three behaviors that they would be willing to ignore and note each behavior’s positive behavior opposite, which can be praised.

Next, the focus shifts to the antecedents to child compliance: giving good instructions and setting up age-appropriate rules and expectations. Leaders present examples of “good” instructions (i.e., those that elicit compliance) and “bad” instructions (i.e., those that elicit noncompliance). Humorous examples are given and parents are invited to identify which types of instructions they typically use. Examples of “bad” instructions are repeating instructions over and over again and giving instructions in the form of a question rather than in the form of a declaration. Examples of “good” instructions are giving no more than one or two instructions at a time and following instructions with a period of silence so that the child has a chance to comply. The importance of establishing clear, age-appropriate rules and expectations is also discussed and parents are invited to share examples of rules and how to communicate them effectively to children.

Discipline and punishment.

Sessions 6 and 7 are devoted to the topics of discipline and punishment. The session first focuses on the development and implementation of household rules and strategies by which these rules can be enforced. The devaluation of physical punishment is then carefully presented because this can be a delicate topic for some parents. Alternatives to physical punishment are presented including time-out, response-cost procedures (e.g., privilege removal), and the use of contingent work chores as punishment. At the end of the session, parents are asked to select one punishment procedure that they will try on a consistent basis for one to two weeks and then report back to the group.

Family cohesion, PICC model, and planning for the future.

In Session 8, the importance of family cohesion is presented. Suggestions such as initiating a parent night and giving parents a guide of fun things to do in the community are all discussed. Parents are then introduced to the PICC model, which the children have been practicing in their intervention groups for a few weeks. Parents are encouraged to remind their children to utilize this problem solving technique at home as well as at school. Finally, in Sessions 9 and 10 the group focuses on planning for middle school and the future. This includes the utilization of “summer guides” which give a list of summer programs that may be of interest to parents, and detailing what to expect in the middle school their child will be attending. In addition, many of the previous session topics are reviewed with the emphasis on how these same techniques can be applied to future adolescent topics such as going out with friends on the weekend. At the end of the session, parents discuss which aspects of the program they enjoyed and found the most useful.

IMPORTANT ISSUES IN ANGER MANAGEMENT TRAINING

In this paper, we have presented the conceptual model which serves as the basis for our anger management training programs, have described the format of the child and parent components, and have presented an overview of the research findings. Our experience to date indicates that programs like Anger Coping and Coping Power are effective, useful, and can have a meaningful place in a clinician’s “toolbox” of procedures for working with angry, aggressive children. To conclude this discussion of the programs, there are three key points that should be emphasized. First, interventions for angry, aggressive children should address children’s arousal regulation as well as their cognitive and behavioral skills. Second, when anger management programs are delivered in a group context, intervention staff must be highly alert to the possibility of deviancy training occurring. Third, although it is clearly valuable to have explicit evidence-based procedures and manuals to guide implementation of programs such as these, it is also important to attend to individual differences in children and to consider how these differences might impact what is emphasized in the program for a given child. This section will now cover these three points in greater detail.

Focus on arousal, emotion, cognition, and behavior.

Research has indicated that, in response to provocations, aggressive children can have increases in their heart rate and concurrently can have increasingly hostile attributions about the intentions of others (Williams, Lochman, Phillips, & Barry, 2003). These increases in arousal and in hostile attributions are significantly correlated, and it is reasonable to assume that physiological changes can contribute to distortions in cognitions, and that distortions in cognitions influence physiological changes. Anger, and the physiological arousal associated with it, can flood a child’s ability to logically and accurately think through the social difficulty they are encountering and the way they could respond to that problem. As a result, anger management interventions should focus on two key areas: anger and arousal self-regulation, and social-cognitive skills.

In our intervention framework, children first learn skills to control the surges of arousal that they experience as they become angrier. They learn how to recognize their own signs of anger more accurately, and especially to recognize low to moderate levels of anger. Once aware of their increasing anger in a situation, they can use some of the anger management skills they learn, including self-statements, relaxation, and distraction. Once children have acquired these basic anger management skills, they can better modulate their initial anger response, which will then permit them to use problem-solving skills more successfully. Thus, the second major area of skill development in our anger management programs involves facilitating children’s development of more competent problem-solving and perspective-taking skills. As children become more adept problem-solvers, they can become better at anticipating problem situations before they escalate. When anger-aroused, children are more likely to resort to automatic information processing, and to be less likely to carefully consider the arena of problem solutions available to them (e.g., Rabiner, Lenhart, & Lochman, 1990). A major goal of problem-solving training during intervention is to have children explore the more competent problem solutions they have stored in their memory. Through role-playing and discussion these more competent solutions become more salient, and rise to the top of the “memory bin.” The more competent, verbally assertive solutions are thus more likely to be accessed the next time the child is in a situation where he or

she is beginning to become anger-aroused, and is using automatic processing.

Avoidance of deviancy training.

Recent research has clearly indicated that adolescents who receive group interventions can actually have even more problem behaviors, such as substance abuse, after the intervention than do equally problematic adolescents who did not receive a group intervention (Dishion & Andrews, 1995). Within certain groups that are comprised of highly aggressive and antisocial adolescents, the adolescents subtly reinforce each others' deviant attitudes and behavior, producing a form of deviancy training. These potential iatrogenic effects are a serious concern for clinicians. Although we have not found overall iatrogenic effects for the Anger Coping and Coping Power Programs, it has been evident that certain individuals do engage in deviancy training with each other. To counteract deviancy training, it is imperative that group leaders carefully monitor children's behavior throughout group sessions, and enforce group rules as needed, redirecting children who try to discuss "war stories" of their exploits. By using individual sessions to enhance the group leaders' positive relationship with each child, by using the goal setting procedures to reinforce positive behavior development outside of the group session, and by breaking groups into subgroups or into individual sessions as needed, clinicians can take active steps to circumvent a deviancy training effect and instead to create a constructive, positive peer group environment. In addition to carefully monitoring and structuring the group environment, clinicians can assist children in responding to deviant peers in their neighborhood and school environments through planned group activities. The programs' focus on social skills training to assist children to become more successfully engaged with nondeviant peers, and on refusal skills and peer pressure training, can assist children in more successfully navigating the deviant peer contexts in their natural environments.

Adapting the intervention to individual children.

It has become evident that different types of aggressive children have different patterns of social-cognitive deficiencies. In contrast to moderately aggressive children and adolescents, highly violent children and adolescents have a more complete set of social-cognitive deficiencies, including encoding errors, attributional biases, problem-solving deficits,

and expectations that aggressive behavior will work (Lochman & Dodge, 1994). In comparison to proactively aggressive children, reactively aggressive children are more likely to have distorted encoding and attribution processes (Dodge, Lochman, Harnish, Bates, & Pettit, 1997). In comparison to children with Oppositional Defiant Disorder, children with Conduct Disorder are more likely to have problem-solving deficits in many social contexts in their lives, with teachers and parents as well as with peers (Dunn et al., 1997). Thus, to be optimally effective, clinicians should assess which children in their groups have certain types of social-cognitive and self-regulation deficiencies, and then spend more time on those elements of the Anger Coping or Coping Power Program that have particular relevance for certain children. A major task inherent in the dissemination of evidence-based interventions involves this issue of adapting effective interventions to address individual children's distortions and deficiencies, rather than maintaining rigid adherence to a manual in the same way for all children.

REFERENCES

- Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information processing mechanisms in children's social adjustment. *Psychological Bulletin*, 115, 74-101.
- Dishion, T. J., & Andrews, D. W. (1995). Preventing escalation in problem behaviors with high risk young adolescents: Immediate and 1-year outcomes. *Journal of Consulting and Clinical Psychology*, 63, 538-548.
- Dodge, K. A., Lochman, J. E., Hamish, J. D., Bates, J. E., & Pettit, G. S. (1997). Reactive and proactive aggression in school children and psychiatrically impaired chronically assaultive youth. *Journal of Abnormal Psychology*, 106, 37-51.
- Dunn, S. E., Lochman, J. E., & Colder, C. R. (1997). Social problem-solving skills in boys with conduct and oppositional disorders. *Aggressive Behavior*, 23, 457-469.
- Goleman, D. (1995). *Emotional intelligence*. New York: Bantam Books.
- Gouze, K. R. (1987). Attention and social problem solving as correlates of aggression in preschool males. *Journal of Abnormal Child Psychology*, 17, 277-289.
- Haapasalo, J., & Tremblay, R. E. (1994). Physically aggressive boys from ages 6 to 12: Family background, parenting behavior, and prediction of delinquency. *Journal of Consulting and Clinical Psychology*, 62, 1044-1052.
- Joffe, R. D., Dobson, K. S., Fine, S., Marriage, K., & Haley, G. (1990). Schoolwide social problem-solving in depressed, conduct-disordered, and normal adolescents. *Journal of Abnormal Child Psychology*, 18, 565-575.
- Katsurada, E., & Sugawara, A. I. (1998). The relationship between hostile attributional bias and aggressive behavior in preschoolers. *Early Childhood Research Quarterly*, 13, 623-636.
- Larson, J., & Lochman, J. E. (2002). *Helping schoolchildren cope with anger: A cognitive behavioral intervention*. New York, NY: Guilford Press.
- Lazarus, R. S. (1991). *Emotion and Adaptation*. London: Oxford University Press.

- Lochman, J. E. (1985). Effects of different treatment lengths in cognitive-behavioral interventions with aggressive boys. *Child Psychiatry and Human Development*, 16, 45-56.
- Lochman, J. E. (1992). Cognitive behavioral interventions with aggressive boys: Three-year follow-up and preventive effects. *Journal of Consulting and Clinical Psychology*, 60, 426-432.
- Lochman, J. E., Burch, P. P., Curry, J. F., & Lampron, L. B. (1984). Treatment and generalization effects of cognitive-behavioral and goal setting interventions with aggressive boys. *Journal of Consulting and Clinical Psychology*, 52, 915-916.
- Lochman, J. E., Coie, J. D., Underwood, M., & Terry, R. (1993). Effectiveness of a social relations intervention program for aggressive and nonaggressive rejected children. *Journal of Consulting and Clinical Psychology*, 61, 1053-1058.
- Lochman, J. E., & Curry, J. F. (1986). Effects of social problem-solving training and self-instruction training with aggressive boys. *Journal of Consulting and Clinical Psychology*, 63, 549-559.
- Lochman, J. E., & Dodge, K. A. (1994). Social-cognitive processes of severely violent, moderately aggressive, and nonaggressive boys. *Journal of Consulting and Clinical Psychology*, 62, 366-374.
- Lochman, J. E., & Dodge, K. A. (1998). Distorted perceptions in dyadic interactions of aggressive and nonaggressive boys: Effects of prior expectations, context, and boys' age. *Development and Psychopathology*, 10, 495-512.
- Lochman, J. E., Dunn, S. E., & Wagner, E. E. (1987). Anger. In G. Bear, K. Minke, & A. Thomas (Eds.), *Children's needs II* (pp. 149-160). Washington, DC: National Association of School Psychology.
- Lochman, J. E., FitzGerald, D. P., & Whidby, J. M. (1999). Anger management with aggressive children. In C. Schaefer (Ed.), *Short-term psychotherapy groups for children* (pp. 301-349). Northvale, NJ: Jason Aronson.
- Lochman, J. E., & Lampron, L. B. (1986). Situational social problem-solving skills and self-esteem of aggressive and nonaggressive boys. *Journal of Abnormal Child Psychology*, 14, 605-617.
- Lochman, J. E., & Lampron, L. B. (1988). Cognitive behavioral intervention for aggressive boys: Seven month follow-up effects. *Journal of Child and Adolescent Psychotherapy*, 5, 15-23.
- Lochman, J. E., Lampron, L. B., Burch, P. R., & Curry, J. E. (1985). Client characteristics associated with behavior change for treated and untreated boys. *Journal of Abnormal Child Psychology*, 13, 527-538.
- Lochman, J. E., Lampron, L. B., Gemmer, T. C., Harris, S. R., & Wyckoff, G. M. (1989). Teacher consultation and cognitive-behavioral interventions with aggressive boys. *Psychology in the Schools*, 26, 179-188.
- Lochman, J. E., Lenhart, L. A., & Wells, K. C. (1996). *Coping power program: Child component*. Unpublished manual, Duke University Medical Center.
- Lochman, J. E., Nelson, W. M., & Sims, J. P. (1981). A cognitive behavioral program for use with aggressive children. *Journal of Clinical Child Psychology*, 13, 146-148.
- Lochman, J. E., & Wells, K. C. (1996). A social-cognitive intervention with aggressive children: Prevention effects and contextual implementation issues. In R. Dev. Peters & R.J. McMahon (Eds.), *Prevention and early intervention: Childhood disorders, substance use, and delinquency* (111-143). Newbury Park, CA: Sage.
- Lochman, J. E., & Wells, K. C. (2002a). Contextual social-cognitive mediators and child outcome: A test of the theoretical model in the Coping Power Program. *Development and Psychopathology*, 14, 971-993.
- Lochman, J. E., & Wells, K. C. (2002b). The Coping Power Program at the middle school transition: Universal and indicated prevention effects. *Psychology of Addictive Behaviors*, 16, S40-S54.
- Lochman, J. E., & Wells, K. C. (in press-a). The Coping Power Program for preadolescent aggressive boys and their parents: Outcome effects at the one-year follow-up. *Journal of Consulting and Clinical Psychology*.
- Lochman, J. E., & Wells, K.C. (in press-b). Effectiveness of the Coping Power Program and of classroom intervention with aggressive children: Outcomes at a one-year follow-up. *Behavior Therapy*.
- Lochman, J. E., Whidby, J. M., & Fitzgerald, D. P. (2000). Cognitive-behavioral assessment and treatment with aggressive children. In P. C. Kendall (Ed.), *Child and adolescent therapy: Cognitive behavioral procedures* (2nd ed., pp. 31-87). New York: Guilford Press.
- McMahon, R.J., & Forehand, R. (in press). *Helping the noncompliant child*, 2nd Edition. New York: Guilford Press.
- Milich, R., & Dodge, K. A. (1984). Social information processing in child psychiatric populations. *Journal of Abnormal Child Psychology*, 12, 471-490.
- Pepler, D. J., Craig, W. M., & Roberts, W. I. (1998). Observations of aggressive and nonaggressive children on the school playground. *Merrill-Palmer Quarterly*, 44, 55-76.
- Pine, D. S., Wasserman, G., Coplan, J., Staghezza-Jaramillo, B., Davies, M., Fried, J. E., Greenhill, L., & Shaffer, D. (1996). Cardiac profile and disruptive behavior in boys at risk for delinquency. *Psychosomatic Medicine*, 58, 342-353.
- Rabiner, D. L., Lenhart, L., & Lochman, J. E. (1990). Automatic vs. reflective problem solving in relation to children's sociometric status. *Developmental Psychology*, 71, 535-543.
- Raine, A., Reynolds, C., Venables, P. H., & Mednick, S. A. (1997). Biosocial bases of aggressive behavior in childhood: Resting heart rate, skin conductance orienting and physique. In Raine, A., Brennan, P. A., Farrington, D., & Mednick, S. A. (Eds.) *Biosocial bases of violence*. NATO ASI series: Series A: Life sciences, Vol. 292. (pp. 107-126). New York, NY, US: Plenum Press.
- Scarpa, A., & Raine, A. (1997). Biology of wickedness. *Psychiatric Annals*, 27, 624-629.
- Stomshak, E. A., Bierman, K. L., McMahon, R. J., Lengua, L., & The Conduct Problems
- Prevention Research Group (2000). Parenting practices and child disruptive behavior problems in early elementary school. *Journal of Clinical Child Psychology*, 29, 17-29.
- Waas, G. A., & French, D. C. (1989). Children's social problem solving: Comparison of the open middle interview and children's assertive behavior scale. *Behavioral Assessment*, 11, 219-230.
- Weiss, B., Dodge, K. A., Bates, J. E., & Petit, G. S. (1992). Some consequences of early harsh discipline: Child aggression and a maladaptive social information processing style. [Child Development](#), 63, 1321-1335.
- Williams, S. C., Lochman, J. E., Phillips, N. C., & Barry, T. D. (2003). Aggressive and non-aggressive boys' physiological and cognitive processes in response to peer provocations. *Journal of Clinical Child and Adolescent Psychology*, 32, 568-576.
- Zelli, A., Dodge, K. A., Lochman, J. E., Laird, R. D., & The Conduct Problems Prevention Research Group (1999). The distinction between beliefs legitimizing aggression and deviant processing of social cues: Testing measurement validity and the hypothesis that biased processing mediates the effects of beliefs on aggression. *Journal of Personality and Social Psychology*, 77, 150-166.