Cognitive–Behavioral Therapies With Youth: Guiding Theory, Current Status, and Emerging Developments

Philip C. Kendall

This article begins with a brief description of the guiding theory behind cognitive–behavioral interventions with youth, such as a therapeutic posture, an important cognitive distinction, and a specific treatment goal. Next, on the basis of a review of the literature, the nature of cognitive functioning, the treatments, and the outcome of treatment studies are described and examined for (a) aggression, (b) anxiety, (c) depression, and (d) attention-deficit hyperactivity. Conclusions and emerging developments are provided.

Central to a successful completion of childhood is the child's development of a confident sense of mastery, of appropriate social behavior, and of an ability to engage in self-control. As children enter and pass through school and become more independently involved in social relationships, there is a new emphasis toward carrying through on activities and accomplishing goals. The child must work to strike a balance between compliance with adult rules and the assertion of independent competence. Industrious work in school and social interactions are the testing ground for children to compare themselves with others, to gain a sense of self, and to acquire the skills needed to adjust to the demands of the environment.

Adjusting and coping with these developmental challenges can be a struggle for children, and not all manage the task successfully. Indeed, current estimates of the amount of psychological distress in children in the United States are alarming. Recent epidemiological data suggest that between 15% and 22% of the nation's approximately 63 million youth have mental health problems severe enough to warrant treatment (Costello, 1990; National Advisory Mental Health Council, 1990). Yet, as Tuma (1989) noted, of those in need of mental health care, less than 20% received the appropriate services. These data are probably representative of a concern that is worldwide. Indeed, psychological maladjustment in youth is a major problem confronting today's society.

All children face developmental challenges, yet not all of these children are prepared, and not all of the challenges are met. Thus, the issue facing clinical child psychology is how to best intervene to reduce or remediate the cognitive, behavioral, and emotional difficulties in childhood that are associated with present psychological distress and later psychopathology.

Guiding Theory

Those involved in designing interventions for youth have approached their task from various perspectives. Some have sought to have a preventive influence, intervening to reduce problems in youth at risk for later maladjustment (e.g., Weissberg, Caplan, & Harwood, 1991), whereas others have taken a therapeutic approach, providing therapy for youth with identified psychopathology (e.g., Kendall, 1991a). Some applications have followed more behavioral guidelines (see Barkley, 1990); others have been influenced by rational-emotive therapy (Bernard & Joyce, 1984). Some have sought to intervene at the level of the family (e.g., Robin & Foster, 1989), the school (e.g., Elias, 1989), or the community (e.g., Glenwick & Jason, 1984), whereas others work directly with youth (e.g., Kendall & Braswell, 1985).

Cognitive–behavioral approaches can be defined as a rational amalgam: a purposeful attempt to preserve the demonstrated positive effects of behavioral therapy within a less doctrinaire context and to incorporate the cognitive activities of the client into the efforts to produce therapeutic change. Accordingly, cognitive–behavioral strategies with children and adolescents use enactive, performance-based procedures as well as cognitive interventions to produce changes in thinking, feeling, and behavior (Kendall, 1991b). The cognitive–behavioral analyses of child and adolescent disorders and adjustment problems, as well as related analyses of treatment-produced gains, include considerations of the child's internal and external environment, and represent an integrationist perspective (Meichenbaum, 1977). The model places the greatest emphasis on the learning process and the influence of the contingencies and models in the environment while underscoring the centrality of the individual's mediating-information-processing style in the development and remediation of psychological distress (Kendall, 1985). Cognitive–behavioral therapies do not insult the role of affect and the social context. Rather, they integrate cognitive, behavioral, affective, social, and contextual strategies for change. The cognitive–behavioral model includes the relationships of cognition and behavior to the affective state of the organism and the functioning of the organism in the larger social context.

Therapy With Youth: The Cognitive–Behavioral Posture

The "posture" (used here to refer to one's mental attitude) of the cognitive–behavioral therapist working with youth can be
A Treatment Goal: Building a Coping Template

Cognitive-behavioral theorists have promoted the notion that individuals perceive and make sense of the world through their cognitive structures, also referred to as schemata (Beck, 1976). Such a template has an influence on what is perceived and how it is processed and understood. Children and adolescents are in the process of developing ways to view their world, and cognitive–behavioral treatments provide educational experiences and therapist-coached reconceptualizations of problems to build a new “coping” template. That is, the treatment goal is for the child to develop a new cognitive structure, or a modified existing structure, through which he or she can look at formerly distressing situations. Therapy helps in reducing the support for dysfunctional schemata and in constructing a new schema through which the child can identify and solve problems. An effective intervention capitalizes on creating behavioral experiences with emotional involvement while paying attention to the cognitive activities of the participant. The therapist guides both the youngster’s attributions about prior behavior and his or her expectations for future behavior. Thus, the youngster can acquire a cognitive structure for future events that includes the adaptive skills and appropriate cognition associated with adaptive functioning. The child’s acquisition and use of a coping template is a major goal of the treatment, a goal that requires the therapist’s use of several treatment strategies.

A Cognitive Differentiation: Distortion Versus Deficiency

With cognitive dysfunction emerging as a target for therapy, it is important to recognize that all cognitive dysfunction is not the same and that an understanding of the nature of the cognitive dysfunction associated with specific psychological disorders has important implications for treatment. With reference to children and adolescents, I have made the distinction between cognitive distortions and cognitive deficiencies (Kendall, 1985, 1991b). Deficiencies in cognitive functioning refer to an absence of thinking. Youth with cognitive deficiencies lack careful information processing in situations in which thinking would be beneficial. In contrast, cognitive distortions are evident in youth who engage in information processing but do so in a dysfunctional or biased fashion. Acting without thinking is in marked contrast to action that follows misguided thinking, and treatment strategies must be modified accordingly. Targeting cognitive deficiencies requires stopping nonthoughtful activity and developing and deploying skills in thoughtful problem solving. Cognitive distortions require that the faulty thinking first be identified and that the distorted processing then be corrected.

Anxiety and depression in youth have been linked to distorted thinking, such as misconstruals and misperceptions of the social situation and the demands in the environment, as well as harsh and critical views of the self. For example, a recent study showed that depressed youngsters viewed themselves as less capable than nondepressed youth, even though teachers perceived the groups as indistinguishable (Kendall, Stark, & Adam, 1990). Impulsive children are often found to act without thinking and to perform poorly because of a lack of forethought and planning (deficiencies in information processing; e.g., Douglas, 1972). In aggression, there is evidence of both cognitive deficiency and cognitive distortion (e.g., Lochman, White, & Wayland, 1991). As will become evident as cognitive–behavioral interventions are reviewed, interventions often consider and
target the nature of the cognitive dysfunction in the specific disorder.

**Areas of Application: Current Status**

Cognitive–behavioral approaches to interventions for children and adolescents have been applied to a wide variety of topics (see Kendall, 1991a; Meyers & Craighead, 1984), including anger (e.g., Lochman et al., 1991), attention-deficit hyperactivity disorder (ADHD; e.g., Braswell & Bloomquist, 1991; Hinshaw & Erhardt, 1991), anxiety disorders (Kendall et al., 1992), medical and dental stress (Melamed, Klingman, & Siegel, 1984), depression (Stark, Rouse, & Livingston, 1991), and impulsivity (Kendall & Braswell, 1985). Cognitive–behavioral approaches have also been used with children with chronic illness (e.g., Walco & Varni, 1991) and with learning disabilities (e.g., Keogh & Hall, 1984; Wong, Harris, & Graham, 1991). Inclusion of the parents (e.g., Braswell, 1991; Braswell & Bloomquist, 1991; Kendall et al., 1992) and the families (e.g., Turkewitz, 1984) of youth has also been undertaken from the cognitive–behavioral perspective. In the present discussion, I provide a selective review of applications and their outcomes across several areas: (a) aggression, (b) anxiety, (c) depression, and (d) ADHD. In each, I describe the nature of the disorder, the components of the intervention, and illustrative outcomes.

**Aggression in Youth**

Although common in mild forms during early childhood, aggression becomes clinically significant when it occurs with high frequency or intensity or across multiple settings (e.g., home and school; e.g., Loeb & Dishion, 1983). Five percent to 10% of children display clinically significant aggressive behavior, with boys outnumbering girls by about three to one (Kazdin, 1987; Quay, 1986). Clinical concern has been focused on aggressive children because of the substantial stability of aggressive behavior over time (Huesmann, Eron, Lefkowitz, & Walker, 1984; Olweus, 1979) and because childhood aggressive behavior has emerged as a significant risk marker for subsequent substance abuse, delinquency, and school failure (Cole, Lochman, Terry, & Hyman, 1991; see also Pepler & Rubin, 1991).

What is the nature of cognitive functioning in aggressive youth? Aggressive children can be said to suffer from both distortions and deficiencies in their cognitive processing (Kendall, Ronan, & Epps, 1991). Cognitive distortions involve dysfunctional thinking processes, whereas cognitive deficiencies involve an insufficient amount of cognitive activity in situations in which greater forethought prior to action is needed.

Several factors have been identified in the cognitive distortions of aggressive children. Aggressive children have been found to use fewer environmental cues to mediate their behavior. Dodge and Newman (1981) found that in a "detective" game in which children were to determine whether a fictitious peer had committed a hostile act, aggressive kindergarten children (identified by teacher ratings) used 30% fewer bits of information than did nonaggressive children. Likewise, when allowed to listen to an audiotape about another child's intentions, nonaggressive boys listened to 40% more statements than did aggressive boys (Dodge & Newman, 1981). In addition, aggressive children have been found to pay greater attention to aggressive environmental cues than do nonaggressive children and have been found to recall high rates of hostile cues present in social stimuli (Dodge, 1985; Dodge, Pettit, McClaskey, & Brown, 1986; Milich & Dodge, 1984), to attribute others' behavior in ambiguous situations to their hostile intentions (Dodge et al., 1986), to underperceive their own level of aggressiveness and their responsibility for early stages of dyadic conflict, and to generate fewer verbal assertion solutions and more action-oriented and aggressive solutions to social problems (Asarnow & Callan, 1985; Lochman & Lampron, 1986; Richard & Dodge, 1982). It appears, then, that aggressive children are hypervigilant in scanning their social environment for hostile cues, and that their tendencies to perceive hostile intentions in others' behavior lead them to respond in a nonverbal, action-oriented manner (Kendall & Lochman, in press).

Other cognitive processes have been investigated. Aggressive children have shown an unusual pattern of affect labeling (Garrison & Stolberg, 1983) in that they anticipate that they will have fewer feelings of fear or sadness in difficult social situations. When they suddenly experience these states, aggressive children are likely to be ill prepared to cope, and they are apt to label the generalized arousal as anger. Aggressive children's problem-solving has been found to be limited; however, when aggressive children respond to social conflicts in a more deliberate (rather than automatic) manner, they generate higher rates of competent, assertive solutions (Lochman, Lampron, & Rabiner, 1990; Rabiner, Lenhart, & Lochman, 1990). Aggressive children think of nonverbal, action-oriented solutions when they use quick, automatic processing of social events rather than using deliberate, memory-retrieval strategies. Aggressive children expect that an aggressive solution will reduce aversive reactions from others and allow them to acquire tangible positive outcomes (Perry, Perry, & Rasmussen, 1986), and aggressive adolescents believe that aggressive behavior will enhance self-esteem, will avoid a negative image, and will not cause victims to suffer (Slaby & Guerra, 1988). Boldizar, Perry, and Perry (1989) found that aggressive children placed more value on controlling the victim and less value on victim suffering, victim retaliation, peer rejection, and negative self-evaluation. Similarly, Lochman et al. (1991) have found that aggressive boys value social goals of dominance and revenge more, and a social goal of affiliation less, than do nonaggressive boys.

Aggressive children also demonstrate deficiencies in the final stages of Dodge's (1985, 1986) information-processing model: (a) generation of alternative solutions, (b) a decision concerning which solution is most appropriate, and (c) behavioral implementation of the solution (Kendall et al., 1991; Lochman et al., 1991). In generating alternative solutions, aggressive children have been shown to demonstrate both quantitative and qualitative deficiencies (Lochman et al., 1991). For instance, Richard and Dodge (1982) found that in response to a conflict

---

1 Some portions of this section appear in an expanded form in Kendall and Lochman (in press), Kendall and Braswell (1993), and Kendall, Chansky, and Kortlander (in press). I wish to acknowledge and thank my coauthors for their valuable input.
situation, poorly adjusted children (including aggressive children) produced fewer solutions and a proportionally higher number of hostile, ineffective responses than did cooperative children. Deluty (1981) found that in comparison with assertive and submissive children, aggressive children generated more aggressive solutions to interpersonal conflict situations.

Cognitive–behavioral treatment addresses the various distortions and deficiencies that characterize aggressive children's thinking. To address distortions in the appraisal of situations as well as deficiencies in the generation, selection, and implementation of effective solutions, the treatment relies on the active involvement of the therapist. For instance, through modeling, the therapist overtly verbalizes his or her appraisal of the situation, various solutions to the situation, and possible consequences of the different solutions. Role plays provide the aggressive child not only with a chance to practice interpersonal social–cognitive skills, but also with the opportunity to increase skills in perspective taking. In role plays, which may involve the therapist or a group of other children, aggressive children are given the opportunity to hear the other person's perspective on the situation and thereby increase their abilities to make more accurate attributions about the intent of others as well as to develop greater empathy for the feelings of others.

Self-monitoring and self-instruction components assist children in accurately monitoring their arousal state, labeling the arousal as coexisting with an appropriate emotional state, recognizing situations that typically provide intense feelings of anger and frustration, and using inhibitory self-directives (e.g., "Stop! Think! What can I do?") to slow down the automaticity of their response. Social perspective-taking components focus on helping children to be more aware of nonhostile cues in social situations and to become aware of the variety of intentions that peers and adults might have in ambiguous social situations. Social problem-solving training is a core element in most cognitive–behavioral interventions and involves assisting children to think of a wider array of possible solutions to perceived social provocations, with particular emphasis on verbal assertion, bargaining and compromise solutions, and competent enactment of selected solutions.

What are the effects of cognitive–behavioral therapy for aggressive youth? Research has indicated that cognitive–behavioral therapy is a promising form of treatment and secondary prevention of conduct and oppositional disorders (Kazdlin, 1987). Using a 20-session problem-solving skills training program (combining the Kendall & Braswell [1985] and Spivack & Shure [1974] programs) with aggressive psychiatric inpatient children, Kazdin, Esveldt-Dawson, French, and Unis (1987) reported that problem-solving skills training produced significant reductions in parents' and teachers' ratings of aggressive behavior at posttest and at a 1-year follow-up. These results have been replicated in a study combining problem-solving skills training with parent behavioral management training with inpatient children (Kazdin et al., 1987) and in a study with antisocial children treated in outpatient and inpatient settings (Kazdin, Bass, Siegel, & Thomas, 1989). Some treatment effects for cognitive–behavioral therapy have also been found with day-hospital conduct-disordered children (Kendall, Reber, McLer, Epps, & Ronan, 1990) and with hospitalized aggressive adolescents (Feindler, Ecton, Kingsley, & Dubey, 1986).

Treatment and client characteristics predictive of outcome have been examined by Lochman and his colleagues in a series of studies using a 12- to 18-session school-based anger coping program. Reductions were found in independently observed disruptive classroom behavior and in parents' ratings of aggressive behavior, and improvements in self-esteem were enhanced, when the cognitive–behavioral anger coping program was augmented with a behavioral goal-setting component (Lochman, Burch, Curry, & Lampron, 1984) and when the program was lengthened to include 18 weekly group sessions (Lochman, 1985). Aggressive boys who initially had the poorest problem-solving skills were found to have the greatest behavioral improvement after the anger coping program (Lochman, Lampron, Burch, & Curry, 1985). In a 3-year follow-up study, aggressive boys treated in the anger coping program maintained significant improvements in self-esteem and social problem-solving skills and had a markedly lower substance use rate (Lochman, 1991) than did untreated aggressive boys.

Anxiety Disorder in Youth

Anxiety can be a normal and adaptive response to a variety of situations. The ability to recognize and avoid harm and threat is a necessary component of a child's repertoire. Most childhood fears are transitory, emerge in the course of encounters with new challenges, and are resolved by facing these demands. In contrast to normal anxious reactions, fears or anxieties that are excessive, occur beyond the developmental timetable, or disrupt the child's life are considered maladaptive. Whereas fear is a discrete response to a circumscribed threat and phobias are severe fears involving persistent behavioral avoidance (Barrios & Hartmann, 1988; Miller, Barrett, & Hampe, 1974; Morris & Kratochwill, 1983), anxiety is more diffuse both in stimulus and response and is more long-standing and disruptive than an isolated fear or phobia (Kendall et al., 1992; Morris & Kratochwill, 1991).

Separation anxiety provides a clear illustration of the contrast between normal and pathological forms of anxiety. Anxiety about separation involves a child's being distressed when apart from caregivers: School and social activities are often avoided to maintain contact with caregivers (see also Campbell, 1986). Separation anxiety appears naturally and recedes in early childhood, and it is characterized by the child's protests at times of separation or in anticipation of separation. In contrast, when separation anxiety disorder occurs in a 9- or 10-year-old, this signals a maladaptive anxiety past the developmental timetable and, although it may spring from a child's somewhat realistic concerns about a parent (e.g., in cases of parent conflict), signals the need for intervention in the child's world to rectify the anxiety provocation.

Clinicians and researchers view childhood anxiety as a multidimensional construct manifested at physiological, behavioral, and cognitive levels. Common beliefs hold that the motoric components of anxiety responses include, most prominently, avoidance, as well as shaky voice, rigid posture, crying, nail biting, and thumb sucking (Barrios & Hartmann, 1988). Physiological reactions are said to include an increase in automatic nervous activity, perspiration, diffuse abdominal pain ("butterflies in the stomach"), flushed face, urgent need to uri-
nate, trembling, and gastrointestinal distress (see also Barrios & Hartmann, 1988). The physiological assessment of anxiety in adults has received wide attention (see Himadi, Boice, & Barlow, 1985), yet little empirical data on these indicators in children exist (Barrios & Hartmann, 1988; Beidel, 1988), even though such indicators may be a promising area of research. An exception is a recent study by Beidel (1988) in which significant differences in autonomic activity were found in anxious children, compared with nonanxious controls, during a test-taking task. Overall, test-anxious children had significantly higher heart rates than did nonanxious controls; however, no differences were found in systolic or diastolic blood pressure. Such results confirm cautions by some (e.g., Haynes, 1978) who advocate monitoring more than one physiological indicator because concurrent indicators may not correlate.

What is the nature of cognitive functioning in anxious youth? A variety of anxious children's thoughts have been described, including thoughts of being scared or hurt, self-critical thoughts, and thoughts of danger (see Barrios & Hartmann, 1988). However, until recently, little empirical work has examined cognitions in clinically anxious children. Francis (1988), in her recent review of cognitions of anxious children, concluded that "no definitive statements about the cognitions of anxious children can be made" (p. 276). Studies on circumscribed fears, such as test anxiety (Prins, 1985), in nonclinical samples have found that high anxiety is associated with negative self-referent cognitions (e.g., "I'm going to mess up" or "I'm going to get hurt again").

In terms of information processing, anxious children do not appear to show deficiencies but do evidence a distortion or bias: The individual attends to social or environmental cues but does so in a distorted and dysfunctional manner. Anxious children, for example, seem preoccupied with concerns about evaluations by self and others and the likelihood of severe negative consequences. They seem to misperceive characteristically the demands of the environment and routinely add stress to a variety of situations.

Anxious children endorsed more threat-related self-statements than did nonanxious youth (Ronan, Kendall, & Rowe, 1993) when responding to a self-statement questionnaire and provided more coping self-talk when responding to a thought-listing task (Kendall & Chansky, 1991). Although they reported a higher frequency of coping self-talk at pretreatment, it was also noted that the coping self-talk was excessive and nonfunctional.

What treatments are best for anxiety-disordered youth? Although the treatment of adult anxiety disorders has received much research attention (see Barlow, 1988; Beck & Emery, 1985; Kendall & Watson, 1989; Maser & Cloninger, 1990; Meichenbaum, 1986; Michelson & Ascher, 1987), the outcome literature on treating child anxiety disorders is negligible. Strategies that have proven useful for adults can serve as building blocks in child interventions, with the addition of age-specific intervention materials (e.g., Coping Cat Workbook, Kendall, 1990). A brief description of the components used in the treatment of anxiety disorders in children is presented; however, there is increasing recognition that a combination of strategies is most efficacious (Kendall et al., 1992; King & Ollendick, 1989). Combining strategies is consistent with the multicomponent conceptualization of anxiety: cognitive, behavioral, and physiological response pathways.

Physiological arousal accompanies anxious cognition; thus, methods that help identify children's physiological symptoms and teach them methods to reduce the arousal are often used. Relaxation training is useful in this regard, with scripts available at the child's developmental level (see Koeppen, 1974; Ollendick & Cerny, 1981). Often, the combination of progressive muscle relaxation, deep breathing, and cognitive imagery is used. There are several examples of use of relaxation training with circumscribed anxiety, such as test anxiety (Richter, 1984). It remains unclear whether relaxation alone is helpful for anxiety-disordered children.

Relaxation training, along with the establishment of a fear hierarchy and the pairing of relaxation and fearful situations, composes systematic desensitization (Wolpe, 1973). The underlying principle in systematic desensitization is the pairing of two incompatible emotional states: fear and relaxation. A critical element of desensitization is the hierarchical presentation of feared situations. Beginning with the least threatening situation and building on success experiences allows the child to progress to more frightening situations. Although there is a substantial literature supporting the efficacy of systematic desensitization with children, most studies have used nonclinical subjects with circumscribed fears such as speech anxiety, test anxiety, or dog phobia (e.g., see Deffenbacher & Kemper, 1974); the efficacy of the treatment with more generalized, pervasive fears is not known.

Modeling involves the demonstration of the desired coping behaviors in a feared or stressful situation such that they can be subsequently imitated by the child. Feedback and reinforcement can be used to maintain the desired behaviors (Ollendick & Francis, 1988). Modeling can be accomplished by having a child observe live or symbolic (videotaped) models or participate with a live model. Ollendick (1979) suggested that not all modeling experiences are equally powerful; he noted that the more involved the modeling, the more effective the outcome. Using opportunities for the therapist to serve as a coping model for the child has been found to be an effective and powerful therapeutic tool when working with anxiety-disordered children (Kendall et al., 1992). As a coping model, the therapist self-discloses feared situations that are pertinent to the child's difficulties, describes his or her feelings about these situations, shares whether he or she would feel the same or different in similar situations, and models a strategy for coping with unwanted arousal.

Because practice is essential, role plays and in vivo experiences provide excellent opportunities to try out a variety of coping strategies. The therapist can be active in setting up the behavioral experiments, providing the appropriate amount of concrete detail to engage the child and assist in creating the scene as authentically as possible. Particularly with younger children who may be less able to identify the precipitating events in their anxious reactions, role plays can be used to help the therapist to notice when the child begins to become distressed. In vivo exposure is essential, because it is in these real situations that the newly developed coping skills can be best practiced.

Cognitive models of psychopathology highlight the impact of
maladaptive thinking (e.g., distortions) on maladaptive behavior and stress interventions that modify self-talk and address faulty cognitive processing. In an example of a controlled comparative study, Kanfer, Karoly, and Newman (1975) taught children with nighttime fears to use stimulus-oriented self-talk (e.g., "I am a brave boy; I can take care of myself in the dark") or encouraged them to use stimulus-oriented self-talk (e.g., "There are many good things in the dark; the dark is a fun place to be"). A third group repeated nursery rhymes as a control. In terms of the amount of time a child could stay in a dark room, the results suggested that both active treatments significantly increased the duration of staying alone as compared with the control group children. Altering self-talk had a positive impact on anxiety.

The goal of cognitive interventions is to build a new (or elaborate on an existing) coping template. Building a coping template involves disputing or correcting the characteristic misinterpretation and looking at the events through the alternative template (based on coping). Problem-solving (e.g., D'Zurilla, 1986; Kendall & Siqueland, 1989; Spivack & Shure, 1974) interventions include problem identification and successive stages of problem definition and formulation, generation of alternatives, choice of desired strategy, and implementation and evaluation. Problem-solving skills provide the underlying model for using available coping actions.

Cognitive-behavioral interventions have been applied to children facing stressful medical or dental procedures. Although a child facing a bone marrow transplant, chemotherapy, or painful dental procedures has a reality-based distress, efforts to increase the coping armamentarium of these children have been successful. Also, they provide guidelines as to what interventions are most helpful to children in other stressful situations. Peterson and her colleagues (Peterson & Shigetomi, 1981; Siegel & Peterson, 1980, 1981) demonstrated that children equipped with coping strategies, as compared with either educational information or no preparation, were less anxious and more cooperative and had lower pulse rates (Siegel & Peterson, 1980). Children who received a combination of coping and modeling were even better able to cope with their medical procedure (tonsillectomy: Peterson & Shigetomi, 1981).

In one of the few investigations of an integrated cognitive-behavioral treatment for children with diagnosed anxiety disorders, Kane and Kendall (1989) reported meaningful improvements. Specifically, using a multiple baseline design with 4 subjects diagnosed with overanxious disorder, they found reductions in anxiety as reported by child, parents, and an independent diagnostian. These changes showed significant improvements from pretreatment assessment and returned the child to scores within the normal range, as expected from normative data (see Kendall & Grove, 1988, for discussion of the method of normative comparisons).

In a randomized clinical trial (Kendall, 1993), anxiety-disordered youth were assigned to either a treatment or a wait-list condition. Children receiving therapy were taught a variety of strategies, including relaxation, imagery, problem solving, and modification of self-talk. These strategies enabled the child to change the fearful, threat template into one that views anxiety-provoking situations as situations that can be managed. The active treatment integrates cognitive strategies, such as modification of anxious self-talk and problem solving, with behavioral strategies of relaxation, exposure, evaluation, and reward. These strategies were put into practice in graduated imaginal and in vivo exposure opportunities. At posttreatment assessment, treated subjects evidenced significant reductions in self-reported distress and pathological responses, and were often within normative ranges. Children's self-rated coping ability was also found to be significantly higher. Parents' reports also evidenced significant reductions in reports of anxiety in their children. Diagnoses based on a structured interview were compared from pretreatment to posttreatment: Using the parents' diagnostic interview data, 64% of the treated cases had no diagnosis at posttreatment, whereas only one subject in the wait-list condition showed such change. These findings provide support for the use of cognitive-behavioral treatment for anxiety disorders in youth.

### Depression in Children and Adolescents

Depression is a relatively common mood state, with 40% of 14- and 15-year-olds in the Isle of Wight study reporting feelings of misery and depression (Rutter, Tizard, & Whitmore, 1970). As with many areas of developmental psychopathology, some controversy exists about when the classification of disorders such as dysthymia and major depressive disorder begins on this continuously distributed set of symptoms. Consistent age and gender effects have been noted on depressive symptomatology (Kazdin, 1989) with no sex differences evident in childhood, but with female adolescents having a higher rate of depression than male adolescents.

The nature of depressive symptoms shifts with age, with adolescents displaying more anhedonia, hopelessness, hypersomnia, weight change, and lethality of suicide attempts and children having primarily depressive appearance, somatic complaints, and agitation (Ryan et al., 1987). Depressive disorders may be combined with anxiety (Brady & Kendall, 1992) and conduct disorders (Kazdin, 1989). Major depressive disorder (MDD) includes a more severe set of symptoms than dysthymia, but MDD is not as stable over time as is dysthymic disorder. The mean duration of MDD has been found to be only 32 weeks, with 92% recovery rate for children 1.5 years later (Kovacs, Crouse-Novak, Paulauskas, & Finkielstein, 1984). Children who had an earlier onset of their depressive symptoms had a more stable, chronic course for their depressive disorder.

### What is the nature of functioning in depressed youth?

Research on the cognitive characteristics of depressed children and adolescents has found distortions in attributions, self-evaluation, and perceptions of past and present events. Kaslow, Rehm, Pollack, and Siegel (1988) found that depressed clinic children had more depressogentic attributions than did nondepressed clinic children or nonclinic children. Depressed children have a more external locus of control (Mullins, Siegel, & Hodges, 1985), indicating that they feel less capable of obtaining valued consequences through their own behavior. Separating attributions for positive and negative events, Curry and Craighead (1990) found that adolescents with greater depression attributed the cause of positive events to external, unstable, and specific causes, consistent with prior findings that adoles-
cents experience more anhedonia. Attributions for positive events were more closely associated with depression than were attributions for negative events. The relationship between attributions and depression has been found only for currently depressed inpatient children, and not for children with resolved depression (McCauley, Burke, Mitchell, & Moss, 1986).

Depressed children have low levels of self-esteem and low perceived academic and social competence (Asarnow, Carlson, & Guthrie, 1987; Kaslow, Rehm, & Siegel, 1984). Kaslow et al. (1984) examined the nature of these self-evaluation difficulties on a design-copying task and found that depressed children experienced more self-punishment and set more stringent standards for poor scores. These depressed children were particularly concerned about not doing well on the task. The low self-evaluations of depressed children also seem to produce distorted perceptions of past and present (Haley, Fine, Marriage, Moretti, & Freeman, 1985; Rehm & Carter, 1990). Depressed children in the fifth to eighth grades display a variety of cognitive errors, including overgeneralizing their predictions of negative outcomes, catastrophizing the consequences of negative events, incorrectly taking personal responsibility for negative outcomes, and selectively attending to negative features of an event (Kendall, Stark, & Adam, 1990; Leitenberg, Yost, & Carroll-Wilson, 1986). In addition to these biased appraisal processes, depressed children also have displayed problem-solving deficits in some studies, with low rates of impersonal (but not interpersonal) problem solving (Mullins et al., 1985) and a high rate of depressogenic strategies (Asarnow et al., 1987).

What are the outcomes of cognitive-behavioral treatments of depression in youth? Cognitive-behavioral treatment programs have been developed to address the cognitive distortions seen in depressed children. The treatment components contained in these interventions include (a) self-control skills involving self-consequation (reinforcing themselves more and punishing themselves less), self-monitoring (paying attention to positive things they do), self-evaluation (setting less perfectionistic standards for their performance), and assertiveness training; (b) social skills, including methods of initiating interactions, maintaining interactions, handling conflicts, and using relaxation and imagery; and (c) cognitive restructuring, involving confronting children about the lack of evidence for their distorted perceptions (e.g., Stark et al., 1991).

Only a few studies have reported on the posttreatment effects of the full cognitive-behavioral therapy with depressed children (Kazdin, 1989; Stark et al., 1991). For example, Reynolds and Coats (1986) compared a cognitive-behavioral intervention and a relaxation intervention with a wait-list control condition. Thirty moderately depressed adolescents were randomly assigned to the three conditions. The two interventions met twice weekly for 5 weeks. Both the cognitive-behavioral and the relaxation training interventions, compared with the wait-list control condition, produced significant reductions in depression symptoms according to self-reports and clinical ratings. These treatment effects were maintained at a 5-week follow-up, along with reductions in anxiety and improvements in academic self-concept.

Stark, Reynolds, and Kaslow (1987) assigned 29 moderately to severely depressed children (aged 9–12 years) to self-control, behavioral problem-solving, or wait-list conditions. At posttreatment and at an 8-week follow-up, the self-control and behavioral problem-solving conditions produced significant reductions in depression using self-report and clinical interviews in comparison with the wait-list subjects. However, between-group treatment effects were not evident on mothers' behavioral checklist ratings. This study provided some evidence for the generalization of the treatment effects to home setting (Stark et al., 1991).

The clearest evidence for the specific effects of cognitive-behavioral treatment emerged in the study reported by Stark et al. (1991) with 24 depressed children (Grades 4 to 7) assigned to cognitive-behavioral therapy or to traditional counseling. Both interventions lasted 24 to 26 sessions over 3.5 months and were conducted in small groups. The cognitive-behavioral treatment was a more broad-band intervention than in previous studies and included self-control, social skills, and cognitive restructuring components (see Stark, 1990; Stark et al., 1991). At posttreatment, cognitive-behavioral therapy produced greater improvements in depression and reductions in depressive cognition than did traditional counseling. However, because these treatment gains were not maintained at the 7-month follow-up, the long-term effects of cognitive-behavioral therapy with depressed children have yet to be documented.

Attention-Deficit Hyperactivity Disorder (ADHD)

Currently, the diagnostic category of ADHD reflects a conceptualization in which motor and cognitive components coexist. ADHD involves heightened motor activity, impulsivity, deficits in attention, and deficits in rule-governed behavior (Barkey, 1990). In addition to the cognitive and behavioral components, ADHD often involves a relatively high association with conduct problems and aggression (Hinshaw, 1987).

What is the nature of the cognitive dysfunction in ADHD? That impulsive children often act without thinking is generally accepted and has been widely researched for decades. Although various labels have been used, these children nevertheless have many essential features in common. Douglas and Peters (1979) traced the difficulties of hyperactive children to deficiencies in the "mechanisms that govern (a) sustained attention and effort, (b) inhibitory controls, and (c) the modulation of arousal levels to meet task or situational demands" (p. 67). Barkley (1990) has discussed the "holy trinity" of ADHD symptoms, two of which (inattention and impulsivity) are cognitively related. Recently, the current conception of ADHD has been summarized as a style that shows deficiencies in higher order problem solving, in modulation of behavior to match environmental demands, and in overall self-regulation (Hinshaw & Erhardt, 1991; Whalen, 1989; Douglas, Barr, Amin, O'Neill, & Britton, 1988).

Numerous studies document the various cognitive deficiencies that are found in hyperactive and impulsive children (see Barkley, 1990). For example, research demonstrates that hyperactive children are deficient in their ability to sustain and maintain attention to tasks (e.g., Barkley & Ullman, 1975; Douglas, 1983; Routh & Schroder, 1976; Zentall, 1985), with the attentional deficiency being most dramatic in situations involving dull, repetitive tasks (Luk, 1985; Milich, Loney, & Landau, 1982; Ullman, Barkley, & Brown, 1978; Zentall, 1985).
Research focusing on distractors has shown that hyperactive children encounter the most difficulty in focusing attention when distractors are integrated into the particular task (Ceci & Tishman, 1984; McIntyre, Blackwell, & Denton, 1978) or when distractors are especially appealing (Radosh & Gittleman, 1981; Rosenthal & Allen, 1990). Pearson, Lane, and Swanson (1990) reported that impulsive hyperactive children were unable to allocate attention during complex tasks, whereas their nonhyperactive peers were able to do so.

Other research has suggested that the cognitive functioning of hyperactive children is characterized by an inability to cognitively mediate their behavior. Douglas (1980) summarized the cognitive difficulties of ADHD youngsters as an inability to “stop, look, and listen” and considered this inability to be the most important symptom of the disorder. Cognitive impulsivity has been assessed, with the data suggesting that hyperactive and impulsive children have considerably more difficulty using problem-solving strategies and inhibiting responses on this task than do nonhyperactive children and that they possess inefficient search strategies (Douglas & Peters, 1979) and problem-solving skills (Tant & Douglas, 1982). Measures of cognitive problem solving have been shown to be strong discriminators of hyperactive and nonhyperactive children (Homatidis & Konstantareas, 1981).

What treatments are best for ADHD? The multifaceted nature of ADHD has implications for determining the type of treatment to follow. For instance, treatment that produces positive effects in one symptom area may not affect functioning in another area. The most widely used treatment approach, stimulant medication, effectively addresses attention but may not always improve symptoms in complex cognitive skills. The appeal of stimulant medication lies in the relatively rapid behavioral improvements that medication produces. However, Whalen, Henker, and Hinshaw (1985) warned that improvement in the most salient areas of the ADHD child’s disruptive behavior (e.g., excessive motor activity in young children) may lead to a failure to address deficits in other areas of functioning such as academic performance. Medication has also been shown to reduce motor activity, aggression, and noncompliance and to produce improvements in relationships with mothers, peers, and teachers (Barkley & Cunningham, 1979, 1980; Barkley, Karlson, Strzelecki, & Murphy, 1984; Whalen, Henker, & Dotemoto, 1980, 1981). Despite the apparent effectiveness of medication in addressing facets of ADHD, this treatment approach remains controversial.

Reactions to the negative factors associated with medication, researchers and clinicians have sought alternative treatments (e.g., behavior modification, cognitive–behavioral treatment, and parent training). Broadly speaking, research on alternative treatments has involved examining their efficacy both independent of medication and in combination with medication. For present purposes, I focus on cognitive–behavioral therapy.

With its attention to cognitive processes (e.g., problem solving and anticipation of the consequences of actions), as well as observable behavior, cognitive–behavioral therapy appears particularly well suited to the problems of the ADHD child, many of which have been linked to deficits in cognitive processing. However, the data suggest that although cognitive–behavioral training can reduce one feature of ADHD—impulsivity (Kendall & Braswell, 1982, 1985)—it has not been uniformly found to rectify other features of ADHD. Despite the promising results with impulsive children and the apparent theoretical match of cognitive–behavioral therapy with symptoms of ADHD, the effectiveness of cognitive–behavioral therapy as a treatment of ADHD has remained relatively inconsistent. Although some studies have shown promising preliminary results (e.g., Cameron & Robinson, 1980; Douglas, Parry, Marton, & Garson, 1976), others have failed to show a positive impact (e.g., Brown, Wynne, & Medenis, 1985; see Abikoff, 1987, for a review; Hinshaw & Erhardt, 1991; Whalen et al., 1985).

Research has considered the effectiveness of different versions of cognitive–behavioral treatment in combination with medication. Results of several studies, however (Abikoff, Ganeles, Reiter, Blum, Foley, & Klein, 1988; Abikoff & Gittleman, 1985; Brown et al., 1985), did not show a cognitive–behavioral treatment to be as effective as medication or as providing an enhancing effect over medication when the two treatments were combined. However, it is worth noting that the form of cognitive–behavioral treatment used varies substantially across studies. For instance, Kendall and Reber (1987) noted that the treatment used by Abikoff and Gittleman (1985) did not include the full behavioral component of contingent reinforcement and response costs for learning the problem-solving skills. In light of this situation, suggestions for refinement both in the assessment of children’s functioning and in treatment approaches have emerged. More specifically, Abikoff (1987) argued that effective cognitive–behavioral treatment will require understanding the specific nature of the child’s problems accompanied by a more tailored application of the various components of the treatment to the particular child’s needs. In a similar vein, Whalen et al. (1985) noted that different situations (e.g., academic vs. social) may require different cognitive strategies, with the former creating a situation in which the task demands are much more clear-cut than the latter, which may involve such variables as inconsistent or ambiguous feedback about the child’s behavior. It should also be noted that contemporary applications of cognitive–behavioral therapy for ADHD place a greater emphasis on the role of the parents and family in program implementation (Braswell & Bloomquist, 1991).

Summary: Although the outcomes of reports provide evidence to support the continued development and evaluation of psychosocial treatments (e.g., cognitive–behavioral interventions) for disorders in youth, there is reason to draw different conclusions depending on the specific disorder. When treating aggression, for example, the data are supportive and the encouragement of continued research is appropriate, although therapies of longer duration are recommended. Portions of the problems seen in ADHD can be addressed, but the comparisons with medications suggest limited optimism until greater specificity is achieved. Applications with internalizing disorders, such as anxiety and depression, are much fewer, although the results are very encouraging and continued work should be supported.

Emerging Developments

To assume that there is a single monolithic “right” way to think, behave, and feel is to make a fatal error. Indeed, quite the
contrary is true (Kendall, 1992). The human experience, including childhood and adolescence, is replete with opportunities for a diversity of thoughts, feelings, and actions. The definition of what is "normal" is broad and inclusive; thoughts, feelings, and actions are abnormal only when they are maladaptive for the individual or interfering or destructive for others. Coverage of interventions for children does not suggest that all children should conform to a single-minded definition of appropriate childhood behavior. Rather, interventions are designed to remove detrimental cognitive, affective, or behavioral styles that children may be developing and to offer—at an early point in life—valuable educational experience that can modify unwanted features of their developmental trajectory.

**Consistent Treatment Strategies**

Interventions with youth are perhaps best when they mesh effectively with the normal developmental trajectory. In the target years of development, the move toward autonomy and independence is a central developmental challenge. A decided strength of the cognitive–behavioral strategy is that it works in a collaborative fashion with the youth and, correspondingly, fosters independent development and prosocial behavior change.

The cognitive–behavioral therapies are neither monolithic nor narrow minded (Mahoney, 1977). Quite the opposite is true: Although there are treatment strategies that appear in therapies for the various disorders (see Table 1), there are no rules carved in stone, and the emphasis on cognitive information processing within a context that uses social reward and behavioral procedures to modify maladaptive methods of adjusting is intentionally flexible. Therapy workbooks are often used with youthful clients, thus providing concrete content and enjoyable activities as well as a guide for the implementation of the treatment (e.g., Kendall, 1990).

**Table 1**

<table>
<thead>
<tr>
<th>General strategy</th>
<th>Specific instances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modeling</td>
<td>Use of coping modeling, with therapist self-talk</td>
</tr>
<tr>
<td>Building a coping template</td>
<td>Changing client self-talk, reframing of problems</td>
</tr>
<tr>
<td>Rewards</td>
<td>Use of different contingencies, given the nature of the disorder being treated Modifying the frequency and standards of self-evaluation, depending on the disorder</td>
</tr>
<tr>
<td>Enactive procedures</td>
<td>Role-play exercises Opportunities for practice In vivo exposure Behavioral experiments</td>
</tr>
<tr>
<td>Affective education</td>
<td>Learning about feelings, in self and others Learning to use coping skills when emotionally aroused</td>
</tr>
<tr>
<td>Training tasks</td>
<td>In-session tasks (i.e., workbooks) Homework (out-of-session) assignments</td>
</tr>
</tbody>
</table>

**Broader Treatment Applications**

Contemporary cognitive–behavioral therapy has moved beyond the sole focus on the child client and has incorporated strategies that involve parents, peers, and school personnel. The literature clearly suggests the movement to include interpersonal and social contexts and parents as collaborators or co-clients, but treatment evaluation studies have not kept pace with these expanded clinical applications.

When significant others (peers, teachers, and parents) provide positive feedback for a child's efforts and change their perceptions and attributions about the child, the child's behavioral change is likely to be maintained. However, if these interpersonal systems are not accepting of the child's recent behavior changes, then the child's behavior and cognitions can easily revert to earlier maladaptive levels. Thus, cognitive–behavioral therapy should actively intervene with key individuals in the child's social environment (parents, teacher, and, possibly, peers) to maintain therapeutic change (see Braswell, 1991; Kendall & Morris, 1991). The direction and movement are strengths; the emerging need is for additional evaluation of the broader interventions.

**Comparative Treatment Outcomes**

The basic applications of cognitive–behavioral therapy need added research in terms of the relative efficacy of the treatment as compared with alternative forms of psychological and pharmacological intervention. For example, there are needed comparisons with parent training, parent therapy, family therapy, and behavior modification. As additional alternative therapies (e.g., psychodynamic) begin to be examined empirically, further comparative studies will be needed. Multimethod assessments are needed for all such studies, along with tests of clinical significance (e.g., normative comparisons; Kendall & Grove, 1988) and statistical significance and consideration of cost-effectiveness (e.g., professional cost and child and family time commitment). Comparative studies of medications and cognitive–behavioral therapy for anxiety and depression are much needed. These outcome comparisons need to include and examine the comorbid status of the clients. For instance, there may be differential outcomes for ADHD with or without comorbid conduct problems or anxiety disorders with or without comorbid depression.

Non-specific factors that affect treatment outcome have rarely been examined (e.g., Reynolds & Coats, 1986). Non-specific factors concern, for example, the relationship between the therapist and the child (Kendall & Morris, 1991) and the child's involvement in treatment (Braswell et al., 1985). The social reinforcement provided by the therapist can be a major source of motivation for children. The therapeutic relationship assumes particular importance because many behaviorally and emotionally disordered children have weak relationships with parents and teachers, and thus have been minimally motivated by adults' reinforcement. When a positive therapeutic relationship develops, children are more accepting of therapists' perceptions of events and more open to reframing their own perceptions of events.

Cognitive–behavioral therapies with youth are intentionally
References


Received December 20, 1991
Revision received June 19, 1992
Accepted July 2, 1992