Chapter 30

Review of Empirical Studies on Cognitive Therapy

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This chapter will focus on the empirical literature evaluating the efficacy of cognitive therapy. As will be seen, the bulk of the controlled empirical work to date has involved the treatment of depression, but work with other problem disorders is starting to emerge. Similarly, although the discussion will largely center on Beck's cognitive therapy (abbreviated throughout as CB; since it is, in fact, an integration of cognitive and behavior change principles [Beck et al., 1979]), some attention will be paid to its cognitive and cognitive-behavioral "first cousins," including rational-emotive therapy (RET), systematic rational restructuring (SRR), self-instructional training (SIT), and stress inoculation training (STI), among others.

A MODEL OF THE CHANGE PROCESS

Figure 1 (adapted from earlier theoretical work by Hollon and colleagues in an unpublished manuscript, Hollon et al., 1981, and first published in Hollon and Kriss, 1984) represents a model of the change process that will serve as a working

![Diagram](image-url)

COGNITIVE THERAPY FOR DEPRESSION

Treatment Outcome

Few areas have received as much attention as the treatment of depression with cognitive therapy. As recently as the mid-1970s, Liberman (1975) concluded that most investigations of psychotherapy for depression did not meet acceptable scientific standards. Since that time, a wealth of well-controlled studies have been added to the literature. Given that the various pharmacological and somatic interventions are already so well established in the treatment of depression (Klein and Davis, 1969; Morris and Beck, 1974), it would seem incumbent on proponents of approaches such as cognitive therapy to demonstrate some additional advantage; either superior acute response, specific subgroup by treatment interactions, greater stability of response following treatment termination, or the like. Since the major finding emerging from this literature suggests a strong advantage for cognitive therapy over tricyclic pharmacotherapy with regard to treatment stability, we will review acute response versus the prevention of relapse/recurrence separately.

ACUTE RESPONSE. Although the data are not wholly unambiguous, it would appear that cognitive therapy is an effective treatment for depression (see Hollon, 1981; Hollon and Beck, 1986; Jarrett and Rush, 1985, for expanded reviews).

Several studies have compared cognitive therapy with various minimal or no-treatment controls, typically in the form of an assessment-only wait list. All of the published trials have found cognitive therapy superior to no treatment (Bourque and Doucet, 1984; Comas-Diaz, 1981; Larcombe and Wilson, 1984; McNamara and Horan, 1986; Pecheur and Edwards, 1984; Shaw, 1977; Taylor and Marshall, 1977; Thompson and Gallagher, 1984; Wilson et al., 1983). Three additional unpublished doctoral dissertations evinced similar findings (Carrington, 1979; Magers, 1978; Morris, 1975). The only two studies failing to find differences favoring cognitive therapy were also unpublished doctoral dissertations (Besyner, 1979; Munoz, 1977). These studies are not above critique. Shaw's (1977) design utilized only a single therapist and a college student population (albeit one seeking treatment for depression). Several studies (Bourque and Doucet, 1984; McNamara and Horan, 1986; Taylor and Marshall, 1977) utilized brief treatments in analogue populations. Several other studies utilized specific samples which, while important special populations in their own right, were not representative of clinical depressives in general, including depression in Puerto Rican women (Comas-Diaz, 1981), geriatric populations (Thompson and Gallagher, 1984), persons with multiple sclerosis (Larcombe and Wilson, 1984), and the devotally religious (Pecheur and Edwards, 1984). Put differently, none of these studies represented the ideal design for testing the proposition that cognitive therapy is superior to no treatment for a bona fide sample of clinical depressives.

In general, these studies come in one of three types: early analogue studies with fully realized cognitive therapy and minimal treatment controls (Shaw, 1977), later component analyses directed at dismantling CB (McNamara and Horan, 1986), and later clinical studies with fully realized CB and control conditions in special clinical populations, for whom the efficacy of the tricyclics have not been firmly established (Thompson and Gallagher, 1984). Given the existence of a known standard, the tricyclic antidepressants, such strategies are understandable. Despite the absence of any such ideal design, the available evidence is nearly wholly supportive of the conclusion that cognitive therapy is superior to no treatment.

Only four studies have contrasted cognitive therapy with the somewhat more informative attention-placebo or pill-placebo comparisons. Shaw (1977) found cognitive therapy superior to a nonspecific attention-placebo control condition in a sample of depressed college students requesting treatment at a university counseling center. Besyner (1979), in an unpublished doctoral dissertation, also found cognitive therapy superior to a nonspecific therapy in a sample of symptomatic community volunteers. Conversely, McDonald (1978) found no differences between cognitive therapy plus day care versus day care alone. The fourth trial may prove to be the most informative. In the NIMH Treatment of Depression Collaborative Research Program (TDCRP) (Elkin et al., 1985, 1986), carefully diagnosed primary and secondary depressed nonbipolar outpatients were randomly assigned to 16 weeks of cognitive therapy, interpersonal psychotherapy, imipramine pharmacotherapy plus clinical management, or pill-placebo plus clinical management (the attention-placebo/pill-placebo condition). Although the final report of the TDCRP is not yet available, it appears that cognitive therapy did not prove significantly superior to the attention/placebo control. While it is the case that the pill-placebo condition represented a rather stringent control (it did involve the expectation of improvement from the "medication" and 20 to 30 minutes of weekly contact with an experienced psychiatrist offering support and encouragement), such a finding does not provide much support for the specific efficacy of cognitive therapy.

If this finding holds through the final report of the TDCRP, it may force a reevaluation of cognitive therapy's perceived efficacy. On the other hand, the TDCRP required off-site training and supervision of the therapists recruited into the CB condition, a situation that may have undermined the adequacy with which CB was executed. All therapists did pass a preestablished competency criteria prior to participating in the study, with judgments made by experts in cognitive therapy, but only monthly consultations were provided on actual study cases. This schedule certainly provided less intensive ongoing case supervision than did other comparable studies involving cognitive therapy. It is quite likely that cognitive therapy, as practiced in the project, differed to a greater extent from what its practitioners were used to practicing than did the other modalities, a state of affairs that would place that modality at a relative disadvantage once the intensity of supervision was reduced. Clearly, we must await the full report of the TDCRP before its findings can be adequately evaluated. At this point, too few studies have been conducted to adequately determine whether cognitive therapy outperforms a nonspecific treatment control.

Cognitive therapy has typically fared well in comparison to other presumably active approaches. Several studies have indicated that cognitive therapy might be superior to essentially dynamic interventions; two unpublished dissertations (Carrington, 1979; Morris, 1975) and two published trials with clinical populations (Covi et al., in press; Steuer et al., 1984). Nonetheless, with the exception of the trial by Steuer and colleagues, in which indications favoring CB were limited to a single self-report measure, it is not clear that the psychodynamic interventions were powerfully executed by personnel capable of ensuring their representativeness. Thompson and Gallagher (1984) found no differences between
of the 16-week active treatment period, response to cognitive therapy was slower to develop and not as clearly discriminable from placebo as for tricyclic pharmacotherapy. Nonetheless, the issue of the adequacy of ongoing supervision previously discussed (and its potentially differential relevance for cognitive therapy) precludes any strong interpretation of those findings. Overall, there appears to be fairly compelling evidence that cognitive therapy alone is roughly comparable to tricyclic pharmacotherapy with regard to acute symptom reduction.

It remains unclear whether combined cognitive therapy and tricyclic pharmacotherapy is superior to cognitive therapy alone. Two trials have suggested such a superiority (the psychiatric outpatient sample in Blackburn et al., 1981; Hollon et al., unpublished manuscript), while four others have found no differences (Beck et al., 1985; the general practice sample in Blackburn et al., 1981; Covi et al., in press; Murphy et al., 1984). Where differences have been found, they have typically not been overwhelming in magnitude. There is somewhat more evidence to suggest that adding cognitive therapy to tricyclic pharmacotherapy is superior to pharmacotherapy alone, as four trials have demonstrated this superiority (both general practice and psychiatric outpatient samples in Blackburn et al., 1981; Hollon et al., 1986; Teasdale et al., 1984), while only one trial has indicated no advantage (Murphy et al., 1984). Clearly, there is no contraindication to combining the two approaches (unless one considers the risk of providing a potentially lethal medication to seriously suicidal depressed patients), with some indications of advantage over cognitive therapy alone and somewhat stronger indications of advantage over pharmacotherapy alone.

Overall, it is probably fair to conclude that cognitive therapy is an effective agent in the acute treatment of depression, although the available evidence derives from a series of designs that are not as solid as one might desire. The bulk of the studies utilizing no treatment or attention placebo controls are less than fully supportive of cognitive therapy in improving depression (Klein and Davis, 1969; Morris and Beck, 1974). It is clear that most investigators have pursued a strategy of evaluating cognitive therapy against a known standard.

The first such trial, conducted by Rush and colleagues (1977), suggested that cognitive therapy was not only comparable to tricyclic pharmacotherapy (imipramine) but superior to it, both in terms of acute symptom reduction and the minimization of attrition. However, that superiority emerged only once medication started being withdrawn two weeks before the end of the trial. This suggests that Rush and colleagues may have confounded acute response with relapse prevention. Consistent with this interpretation, subsequent studies have typically suggested comparability between cognitive therapy and tricyclic pharmacotherapy (for example, the psychiatric outpatient sample from Blackburn et al., 1981; Hollon et al., unpublished manuscript; Murphy et al., 1984). Only the general practice sample in Blackburn and colleagues (1981) also evinced a pattern of superiority for cognitive therapy over tricyclic pharmacotherapy, and that in the context of a response rate to pharmacotherapy so low (14 percent) as to call into question the adequacy with which that intervention was implemented. The single posttreatment trial comparing cognitive therapy vis-à-vis tricyclic pharmacotherapy came in the National Institute of Mental Health TDCRP (Elkin et al., 1986). Although not differing significantly from tricyclic pharmacotherapy by the end
to be that cognitive therapy is an effective intervention for depressed outpatients, probably comparable to tricyclic pharmacotherapy alone in terms of acute response, and superior in combination with pharmacotherapy to either modality alone.

**Prevention of Relapse/Recurrence.** If the available evidence suggests comparability between cognitive therapy and the current standard of treatment, tricyclic pharmacotherapy, with regard to acute response, there are strong indications of superiority for CB in preventing relapse or recurrence following treatment termination. Of the five studies that have followed successfully treated patients over treatment-free posttreatment intervals (typically ranging from one to two years), four have found cognitive therapy during the acute treatment phase (either alone or in combination with tricyclic pharmacotherapy) superior to medication without subsequent maintenance (Blackburn et al., 1986; Evans et al., 1985; Maldonado and Vila, 1986; Simons et al., 1986). In three of the four instances (Maldonado and Vila, 1986, used a much shorter follow-up period and a different analytic strategy), relapse rates in cognitive therapy, calculated as time to first relapse in life-table analyses, were only about one-half of what they were in tricyclic pharmacotherapy. The fifth trial, by Kovacs and colleagues (1981) (a follow-up to the earlier trial by Rush and associates) found only a nonsignificant trend favoring cognitive therapy, but overall relapse rates were roughly comparable to those in the other three studies. Recalling that the earlier trial by Rush and colleagues confounded response and relapse by withdrawing medications before the end of active treatment, thus overestimating end of treatment differences favoring cognitive therapy over pharmacotherapy, it seems likely that relapse in the report by Kovacs and colleagues systematically underestimated differences favoring cognitive therapy, by counting early relapses in the drug-treated cell as treatment nonresponders.

Overall, there appears to be strong convergent evidence that cognitive therapy provides greater protection against posttreatment relapse/recurrence than does tricyclic pharmacotherapy. Relapse rates appear to be in excess of 60 percent in pharmacotherapy without maintenance versus rates of approximately 30 percent in cognitive therapy. The higher rate in tricyclic pharmacotherapy is not simply an artifact of medication withdrawal, as indicated by the fact that relapse rates following the termination of combined cognitive-pharmacotherapy are typically no worse than for cognitive therapy alone (Evans et al., 1985). Clearly, something very powerful is provided by cognitive therapy that survives the termination of treatment.

Pragmatically, of course, one could simply continue tricyclic pharmacotherapy for a period longer than is needed to bring about symptom remission. In the study by Evans and associates (1985), continuing medications for one year following symptomatic remission produced relapse/recurrence rates as low as those produced by having provided cognitive therapy during the acute phase (an extensive medication continuation literature exists indicating that pharmacotherapy should be extended across the expected length of the untreated episode; see, for example Glen et al., 1984; Prien et al., 1984). Whether cognitive therapy simply prevents relapse (the return of symptoms associated with the index episode) or provides a more comprehensive prophylaxis against recurrence (the onset of wholly new episodes) remains to be determined. Such studies will require even more extended follow-up periods than the one-year (Kovacs et al., 1981; Simons et al., 1986) and two-year designs (Blackburn et al., 1986; Evans et al., 1985) that have been utilized to date, since the average length of time between episodes appears to be about three years (Beck, 1967). Clearly, relapse and recurrence are somewhat distinct phenomena (Hollon, 1986; Prien and Caffey, 1977); indications of differential impact on each would have profound practical and theoretical implications. It remains unclear as to how cognitive therapy exerts its preventive effect, although early indications suggest that it may do so by virtue of altering the propensity of euthymic former patients to interpret negative life events as being the consequence of major flaws in their own abilities or character (Evans et al., 1985). Clearly, cognitive therapy’s ability to prevent posttreatment relapse is the single most exciting (and robust) finding to emerge from this literature, one which will surely attract subsequent intensive investigation and influence clinical practice in this area. Providing booster sessions after the termination of acute sessions provided no additional prophylaxis in the only published trial to date to attempt such a manipulation (Baker and Wilson, 1985).

**Prediction of Response**

It is important to distinguish between prognostic indicators, variables which predict how different patients will fare in a given therapy, and prescriptive indicators, variables that indicate that a given type of patient will respond better to one type of therapy than another (Hollon, in press). Only the latter are actually useful in the selection of treatment for a given patient. In general, the prognostic factors predicting success in cognitive therapy are quite similar to those predicting success in imipramine tricyclic pharmacotherapy (see Bielski and Friedel, 1976, for a review). In general, patients who are older, female, unemployed, nonendogenous, neurotic, and/or chronically depressed tend to be less likely to respond to cognitive therapy than are other patients not exhibiting these characteristics. This does not mean that such patients are not suitable candidates for cognitive therapy (such a determination would require data speaking to how such patients would fare in the available alternative interventions), simply that other types of patients are more likely to respond to CB than they are.

Full prescriptive indicators are, to date, surprisingly few. Simons and coworkers (1985) found that patients high on pretreatment self-control did better in cognitive therapy than in pharmacotherapy. The endogenous/nonendogenous dichotomy has typically not proven predictive of differential response to cognitive therapy versus tricyclic pharmacotherapy (Blackburn et al., 1981; Hollon, 1986; Kovacs et al., 1981). This is surprising and not at all the case for other types of psychotherapy vis-à-vis pharmacotherapy (Prusoff et al., 1980). Few other prescriptive indicators are now known. Whether such indicators exist and have not yet been discovered, or whether they simply do not exist, remains undetermined at this time.

**Active Ingredients and the Quality of Execution**

While the efficacy of cognitive therapy appears to be reasonably well established, major questions remain as to how it exerts its influence. Presumably, it is the training in identifying and modifying one’s own beliefs and information-processing strategies that carries the bulk of change (Beck et al., 1979). In particular, some have argued that it is the process of empirical hypothesis testing which is the most powerful change agent within the larger package that comprises cognitive
and colleagues, in an unpublished manuscript, similarly found no evidence for differential change in ongoing, surface ruminations, but did find that thinking propensities (for example, attributional styles) changed differentially in cognitive therapy relative to pharmacotherapy. Blackburn and Bishop (1983) also found evidence of greater change in cognitive content and process following cognitive therapy (either with or without medication) than in pharmacotherapy alone. Clearly, more work needs to be done in this regard, but the early studies suggest at least some initial support for cognitive mediational models.

Conclusion

It would appear that Beck’s cognitive therapy is an effective intervention for depression, at least comparable to any other major alternative in the treatment of the acute episode, and perhaps superior to any other in terms of preventing subsequent relapse once treatment is terminated. It is important to note that these conclusions apply most clearly to primary, outpatients, nonpsychotic, nonbipolar depressives; virtually no controlled work has yet been done with secondaries, inpatient, psychotic, or bipolar depressed populations. Within those populations that have been studied, surprisingly few indications of differential prescriptors have been documented. In this regard it is noteworthy that endogeneity does not appear to be a contraindication to cognitive therapy relative to pharmacotherapy. Studies of active ingredients and mediating mechanisms are few and, to date, rather primitive, but the initial findings emerging have not been at variance with the major hypotheses. Instruments capable of describing and evaluating the adequacy of treatment execution should both facilitate such research and help explain variance in outcomes across the empirical literature. On the whole, it would appear that cognitive therapy is a useful addition to the clinician’s armamentarium. In particular, its capacity to reduce risk for relapse is a truly exciting dimension.

COGNITIVE AND COGNITIVE-BEHAVIORAL INTERVENTIONS FOR OTHER DISORDERS

The exposition to follow will be noticeably briefer and less detailed than the preceding discussion of cognitive therapy for depression. In part, this reflects our own interests, but it also reflects a subtle aspect of the empirical outcome literature. While cognitive therapy is far from the only type of cognitive-behavioral intervention that has been put forward, it has, almost certainly, the most fully explored in the context of fully clinically representative trials. Curiously, virtually all of those trials have focused on clinical depression as the disorder of choice. In the section to follow, we draw heavily on a recent review of cognitive-behavioral interventions (Hollon and Beck, 1986). organizing our review around intervention strategies within discrete disorders.

Anxiety Disorder

SPECIFIC FEARS AND PHOBIAS. The bulk of the trials in this literature have been analogue in nature. In general, any of several cognitive or cognitive-behavioral interventions appear to be effective interventions for test anxiety. This statement appears to hold for systematic rational restructuring (Crowley et

The literature with regard to speech anxiety is somewhat more modest. Various cognitive and cognitive–behavioral interventions were typically, but not invariably, superior to attention placebos or wait list controls. For example, Karst and Trehler (1970), Trehler and Karst (1972), and Thorpe and colleagues (1976) found RET superior, while Straatmeyer and Watkins (1974) did not. Gross and Fremouw (1982) found SSR superior to controls, but Lent and colleagues (1981) did not. Craddock and colleagues (1978), Glogower and colleagues (1978), Meichenbaum and colleagues (1978), and Weissberg (1977) similarly found SIT superior to controls, but Fremouw and Zitter (1978) did not. Nonetheless, these approaches have rarely outperformed more purely behavioral interventions, doing so in only two studies (Craddock et al, 1978; Glogower et al, 1978) and falling to do so in six others (Fremouw and Zitter, 1978; Gross and Fremouw, 1982; Hayes and Marshall, 1984; Lent et al, 1981; Meichenbaum et al, 1971; Weissberg, 1977).

These interventions have fared well in the treatment of social anxiety, typically proving superior to minimal treatment controls (SSR) Kanter and Goldfried, 1979; Shahar and Merbaum, 1981) and SIT (Glass et al, 1976; Elder et al, 1981), although RET did less well or no better than comparison conditions (DiLoreto, 1971; Emmelkamp et al, 1985). In the only trial to use Beck’s cognitive therapy in this population (in this instance, combined with simulated exposure), Heimberg and colleagues (1986) found that approach superior to an educational supportive control condition. Cognitive–behavioral interventions typically performed as well, but no better than, more purely behavioral interventions in the treatment of other specific phobias such as SSR (D’Zurilla et al, 1973; Wein et al, 1975) and SIT (Denny et al, 1977; Kanfer et al, 1975; Girodo and Roehl, 1978; Ladouceur, 1983). In Biran and Wilson (1981), the most fully clinically representative of all of these trials, a mixture of SIT and SSR was clearly inferior to direct exposure.

GENERALIZED ANXIETY DISORDER. In the first relevant study in the area of generalized anxiety disorders, Woodward and Jones (1980) reported finding that a combined self-statement replacement plus desensitization was superior to either condition alone in a fully clinical population. Nonetheless, a careful reading of their published report makes it difficult to discern the empirical justification for this conclusion. A more recent project by Barlow and co-workers (1984), in which a combination of Beck’s cognitive therapy and Meichenbaum’s stress inoculation training was compared to a wait list control, indicated a strong advantage for the cognitive–behavioral intervention. Clearly, more work needs to be done, but this latter study is promising in light of the generally poor treatment response in this population.

OBSESSIVE-COMPULSIVE DISORDERS. In the only existing trial with an obsessive-compulsive population, again with a fully clinical sample, Emmelkamp and associates (1980) found little added advantage when cognitive restructuring was added to in vivo exposure.

AGORAPHOBIA. The bulk of the work in this area has involved fully clinical populations. In general, various cognitive or cognitive–behavioral interventions have typically failed to match more purely behavioral interventions in the treatment of agoraphobia (Emmelkamp et al, 1978, 1985, 1982). In two more studies, the addition of a cognitive component to behavior therapy did not enhance efficacy over the purely behavioral component alone (Emmelkamp and Marsch, 1982; Williams and Rapoport, 1983). In a sixth study, Mavissakalian and colleagues (1983) found that adding self-instructional training to in vivo exposure was less effective than adding paradoxical intent to in vivo exposure. The existing data are clearly not supportive of the utility of cognitive approaches in the treatment of agoraphobia. The question that emerges from this literature is whether cognitive approaches have been powerfully implemented in these trials. The research groups involved have generally been behaviorally oriented, and the cognitive approaches utilized have typically been treated largely as alternative control conditions rather than treatments of interest in their own right.

SUMMARY. In general, there appears to be a disparity between the utility of cognitive and cognitive–behavioral interventions as evaluated in analogue trials, versus their utility for more representative clinical problems in more fully clinical populations. In general, analogue studies involving specific phobias typically produced evidence of superior efficacy relative to minimal treatment controls (but not more purely behavioral interventions), while studies involving bona fide clinical populations rarely found the cognitive and cognitive–behavioral combinations even comparable to the more purely behavioral approaches.

Assertion Problems

In general, the various cognitive and cognitive–behavioral approaches have fared well in the treatment of assertion problems. This statement appears to hold for RET (Aiden et al, 1978; Carmody, 1978; Wolfe and Fodor, 1977), SSR (Derry and Stone, 1979; Hammen et al, 1980; Linehan et al, 1979), and SIT (Kazdin and Masliah, 1982; Kaplan, 1982; Safran et al, 1980; Thorpe, 1975). In general, these approaches have proven superior to various control conditions and at least equivalent to more purely behavioral interventions.

Anger and Aggression

Few controlled studies exist in this area but, to the extent that they do, the results typically have been promising. Forman (1980) and Camp and colleagues (1977) have both produced studies pointing to some efficacy for SIT-like approaches. Novaco (1976) and Schüchter and Horan (1981) have both demonstrated the utility of a stress inoculation approach in controlling chronic anger arousal. While the data are sparse, these two separate programs look quite promising.

Schizophrenia

At this time, there are no convincing data that cognitive or cognitive–behavioral interventions are at all effective in the treatment of schizophrenia. An early promising analogue by Meichenbaum and Cameron (1973) involving SIT failed an effort at replication by Margolis and Shearer (1976). This is not to say that various cognitive and cognitive–behavioral approaches may not prove to be useful adjuncts to antipsychotic medication in dealing with the demoralization, depression, and anxiety that often accompany schizophrenia, but there is no reason to think that it is in any way a substitute for antipsychotic medication in terms of controlling the core thought disturbance.
Behavioral Medicine

Several studies have suggested the utility of any of the various cognitive approaches to the modification and control of headaches (Holroyd and Andrasik, 1978; Holroyd et al., 1977; Lake et al., 1979). Similarly, studies of analogue pain situations have found evidence of efficacy for cognitive interventions (Horan et al., 1977; Klepac et al., 1981). One study (Bradley et al., 1985) suggested that a combination of thermal biofeedback and cognitive—behavioral group therapy was superior to supportive group therapy and a no-treatment control in terms of reducing the pain associated with rheumatoid arthritis. Thurman (1985) found that a blend of RET and STI (with or without assertion training) was significantly more effective in reducing Type A behavior patterns and hostility, factors implicated in a variety of chronic health problems. In a particularly well-executed study, Turner (1982) found a stress inoculation approach comparable to relaxation training, with both superior to wait list, in the treatment of chronic back pain. Finally, Kendall and colleagues (1979) found a stress inoculation condition superior to traditional patient education in preparing patients to cope with the stress of cardiac catheterization. The interested reader is directed to a recent monograph by Turk and associates (1983) for a thorough review of the role of cognitive and cognitive—behavioral approaches within the domain of behavioral medicine.

Marital Distress

Although an area of burgeoning interest, there has been, as yet, little controlled empirical work testing the utility of cognitive approaches to marital distress. Margolin and Weiss (1978) found the addition of rational restructuring to behavioral marital therapy superior to that latter condition alone, while Huber and Milstein (1985) found RET superior to a wait list control. Everaered and Dekker (1985) found RET comparable to a standard Masters and Johnson sex therapy in terms of improving troubled sexual functioning, but superior in terms of reducing overall marital distress. Munjack and coworkers (1984) found RET superior to a wait list control in terms of reducing sexual dysfunction within marital dyads. Epstein and colleagues (1982) found an approach based on Beck's cognitive therapy superior to communication skills training. However, Baucom (1981) and Emmelkamp and associates (1984) found little advantage for the addition of a cognitive component styled after RET to more purely behavioral approaches. Beach and O'Leary (1986) found behavioral marital therapy superior to Beck's cognitive therapy in terms of reducing marital distress, although both were superior to a wait list control in terms of reducing depression. Clearly, more work needs to be conducted, paying careful attention to underlying theory and careful treatment implementation before any firm conclusions can be drawn.

Obesity and Eating Disorders

Surprisingly little work has been done in the area of eating disorders. Dunkel and Glaros (1978) found STI superior to a purely behavioral approach in the treatment of obesity. On the other hand, Wilson and colleagues (1986) found a cognitive intervention modeled after the purely cognitive component of Beck's cognitive therapy to be less effective than the same approach combined with exposure and response prevention in a bulimic sample, an advantage sustained through a one-year posttreatment follow-up. In addition to representing a worthwhile initial trial in an important population, this study appears to conform to the basic dictum that approaches which combine (and, especially, integrate) cognitive and behavioral components tend to prove more effective than either single modality alone (Bandura, 1977; Hollan and Beck, 1986). However, another major ongoing trial (Freeman et al., 1985) in which individual Beckian cognitive therapy (executed as the integration of cognitive and behavioral components) is being contrasted with both individual behavior therapy and a supportive—educational group therapy, may confound this basic principle. Early results suggest that the purely behavioral component may be at least comparable to the cognitive—behavioral integration in terms of reducing bulimic symptoms (but not associated depression). Little systematic work has yet been published in the area of anorexia, although a superb clinical-theoretical piece has been generated (Garner and Bemis, 1982) and important work is in progress.

Addictive Disorders

Despite the considerable interest in recent years in the role of cognitive factors in maintaining addictive processes (for example, Brownell et al., 1986; Marlatt and Gordon, 1985), there have been surprisingly few direct efforts to evaluate the contribution of cognitive interventions, at least as distinct from the more generic behavioral and behavioral self-control approaches. One study has looked at the utility of Beck's cognitive intervention in the treatment of heroin addicts, finding either cognitive therapy or supportive psychotherapy (each in combination with paraprofessional drug counseling) superior to that of drug counseling alone in terms of reducing subjective distress and drug usage (Woody et al., 1984). These treatment differences were largely confined to clients with more severe initial problems, suggesting that the formal therapies were most necessary for the more severely afflicted. Given the increasing theoretical prominence accorded cognitive factors in the maintenance of treatment gains, we anticipate accelerated controlled empirical work in this domain over the next decade.

Childhood Disorders

Along with the treatment of depression via Beck's cognitive therapy, no other set of disorders has been as fully and successfully explored as self-instructions training for impulsive children. Across a variety of studies (Arnold and Forehand, 1978; Kendall and Brussell, 1982; Kendall and Finch, 1978; Kendall and Wilcox, 1980; Kendall and Zupan, 1981; Meichenbaum and Goodman, 1971; Nelson and Birkimer, 1978; Parrish and Erickson, 1981), self-instructional training combined with modeling and response cost contingencies has proven superior to a variety of control conditions and alternative interventions. Nonetheless important questions remain regarding the clinical representativeness of the change observed (improvement is typically found on test tasks but is more equivocal on measures of impulsivity, attention, memory, and behavior) and the generalizability of these changes across situation and time (Abikoff, 1985; Gresham, 1985; Hollon and Beck, 1986; Whalen et al., 1985). Similarly, it is not clear whether these procedures will prove to be an effective alternative to medications and/or behavioral contingency management for working with seriously attention-defic disordered children (see, however, Hinshaw et al., 1984, for an exception).
CONCLUSIONS

The various cognitive and cognitive–behavioral interventions appear to have fulfilled some, but not all, of their original promise. The following conclusions can probably be drawn:

1. Beck's cognitive therapy for depression appears to be as effective as any other alternative intervention in the treatment of acute episodes, and more effective than other alternatives in terms of preventing posttreatment relapse. Little is yet known about inpatient, psychotic, or bipolar populations. Indicators of differential response are few. Work is underway to identify the active components leading to change and the mechanisms mediating that change but, to date, that work is not sufficiently well developed to be conclusive.

2. The utility of the cognitive–behavioral interventions for the various anxiety-based disorders remains an open question. The various interventions have fared better in analogue trials than in fully clinical samples. In those latter samples, the more generic cognitive and cognitive–behavioral interventions have not fared as well as the more purely behavioral interventions. Whether this state of affairs reflects the limited efficacy of rationality and repetition-based cognitive approaches, a more general inefficacy for all of the cognitive approaches, or some inadequacy in the execution of those interventions in these trials remains to be determined. To date, Beck's cognitive therapy, based on empirical hypothesis testing, has only begun to be tested in these populations, but initial indications are promising.

3. Interesting preliminary findings have emerged in some areas (for example, assertion training, anger control, behavioral medicine, marital distress, obesity and eating disorders, and addictive disorders) that merit further exploration. There appears to be little role for these interventions in the treatment of schizophrenia.

4. Meichenbaum's self-instructional training appears to be effective in modifying impulsive behavior patterns in children, although the generalizability and full clinical significance of these changes remain unclear.

Whether any one version of the cognitive–behavioral interventions is truly superior to any or all of the others remains to be determined. What is striking is the extent to which specific types of cognitive–behavioral interventions have been targeted to specific disorders (for example, Beck's cognitive therapy for depression, Meichenbaum's self-instructional training for childhood impulsivity, stress inoculation training in pain disorders, and so on). The approach relying most purely on rationality, RET, has perhaps the least carefully documented empirical support, although that state of affairs may be the result of its earlier clinical acceptance, leading, paradoxically, to a preponderance of earlier, less adequately executed clinical trials. The other approach relying largely on rationality, SRR, has held up somewhat better in somewhat better executed clinical trials, albeit trials that were mostly analogue in nature. Repetition-based approaches, STI and ST1, each have performed well in some populations, most notably childhood disorders for ST1 and behavioral medicine for STI, although results are far less conclusive with other disorders in adults. Beck's cognitive therapy, with its emphasis on empirical hypothesis testing, has clearly performed well with respect to depression, but remains largely untested in other disorders. Clearly, more work is needed to explore how cognitive therapy exerts its influence in the treatment of depression, just as more work needs to be done in which fully clinically representative interventions are delivered to fully clinical populations in areas other than depression.

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