Cognitive and behavioral interventions
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This study compared the effects of communication skills training and cognitive therapy in 32 severely distressed couples. The results indicated that couples receiving communication training showed significant improvement on main targets, the Communication Questionnaire, and the Relationship Beliefs Inventory. Cognitive therapy resulted also in significant improvements on these measures. On the direct behavioral observation measure, communication training proved to be clearly superior to cognitive therapy. A direct comparison between both conditions indicated that cognitive therapy was more effective on the main targets, whereas communication skills training was more effective on direct behavioral observation.

The cognitive trend in behavior therapy has also had a major impact on the theory and practice of behavioral marital therapy. Despite impressive results in outcome studies, a substantial minority of clinically distressed couples have not responded to traditional behavioral marital therapy, such as behavioral contracting (Boelens, Emmelkamp, MacGillavry, & Markvoort, 1980) and communication skills training (Emmelkamp, Van der Helm, MacGillavry, & Van Zanten, 1984), or have remained distressed after achieving successful behavior change.
Such results have led to the acknowledgement of limitations in both the conceptual model and the treatment technology and increased attention to the assessment and modification of cognitive processes that may mediate spouses’ behaviors toward one another.

Based on clinical observations and recent analogue research, a number of therapists (e.g., Jacobson, 1984; Weiss, 1984) have stressed that distressed couples have cognitive and perceptual biases and that the planning of behavior change must take into account the individuals’ cognitive appraisals of the events in their relationships. Such clinical observations have led to the inclusion of cognitive restructuring techniques in the repertoires of many behavioral marital therapists and, more gradually, to investigations of the effectiveness of cognitive interventions.

One of the earlier attempts to investigate the utility of explicitly focusing upon cognitive factors in behavioral marital therapy was carried out by Margolin and Weiss (1978). In comparing behavioral marital therapy with a treatment including behavioral marital therapy plus cognitive restructuring, they found that behavioral marital therapy plus cognitive restructuring was significantly more effective than behavioral marital therapy on several outcome measures. However, the highly abbreviated intervention period (four sessions) restricts the conclusions to be drawn from this study.

Baucom and Lester (1986) reported the results of a study in which 24 maritally distressed couples were randomly assigned to one of three treatment conditions: (a) behavioral marital therapy alone, (b) cognitive restructuring plus behavioral marital therapy, and (c) waiting list. Behavioral marital therapy consisted of communication training, problem solving, and quid pro quo contracting. The combined cognitive-behavioral therapy consisted of 6 weeks of training in cognitive restructuring followed by 6 weeks of behavioral therapy. Results showed that cognitive restructuring plus behavioral marital therapy was equally as effective as behavioral marital therapy alone.

The two outcome studies discussed so far studied the impact of cognitive restructuring on behavioral marital therapy. Huber and Milstein (1985) evaluated the effects of cognitive restructuring on its own. Cognitive restructuring showed significant gain scores on all outcome measures as compared to the control group. The aim of the present study was to compare the efficacy of cognitive therapy alone versus behavioral marital therapy. The behavioral marital therapy
consisted of communication skills training that had proven to be effective in dealing with marital distress in previous studies (Baucom, 1984; Emmelkamp et al., 1984; Turkewitz & O'Leary, 1981). Furthermore, we were interested in whether the effects of both treatment procedures were due to specific processes presumed to underlie these procedures, that is, whether cognitive factors were responsible for improvement in cognitive therapy and changes in communication were responsible for improvement in communication skills training. Finally, in contrast to most other studies on behavioral marital therapy, only severely distressed couples participated in this study, which enhances the external validity of this study.

**METHOD**

**Patients**

All couples were referred to our department by a community mental health center for treatment of their marital problems. Couples with relationship problems were accepted for the study unless the main complaint consisted of a sexual dysfunction or one of them was psychotic. In addition, partners had to be living together, though not necessarily married, during the course of treatment.

A total of 47 couples met these criteria. They were randomly assigned to one of the two treatment groups, that is, communication training or cognitive therapy. After an intake interview, in which the study was explained to the couple, four couples decided not to cooperate in the study, leaving 43 couples. In the course of treatment several couples dropped out for a variety of reasons. In 5 couples the severity of individual psychopathology of one of the partners did not justify standardized treatment for marital problems only (3 major depression and 2 addictions); these patients were treated outside the experimental study. Two couples dropped out because they decided in the course of treatment to live apart and 2 other couples because the randomly assigned treatment did not meet their expectations. Finally, 2 couples had to discontinue treatment, 1 due to childbirth and 1 due to removal to another part of the country. Of course, other factors (e.g., problems in the therapeutic relationship) may have been operational, but were not mentioned by the couples. Thus 32 couples completed the project.

The mean age of the participating couples was 35.5 years. Characteristics of the couples with respect to marital status, duration of relationship, children and education are shown in Table 1. There were
no striking differences between both conditions on any of these variables.

**Therapists**

Seven advanced clinical psychology students served as therapists (three male, four female). Each couple was treated by one therapist. Before the start of the project therapists were extensively trained (both theoretically and practically) in the treatment procedures to be used (e.g., by means of role play). Because there are no instruments to assess the skill level of the therapist, the supervisor (P.E.) decided when therapists were ready to deliver the model. Further, twice a week the therapist and the supervisor held group sessions (90 minutes) during which problems involved in the treatment were thoroughly discussed. Therapy sessions were audiotaped and overheard by a member of the research team in order to check whether therapists adhered to the treatment protocol. As a rule, all sessions were overheard in toto, but due to scheduling problems or technical problems, a limited number of sessions could not be checked.

**Measures**

The following measures were selected in order to evaluate whether treatments enhanced marital satisfaction and whether treatment had produced changes in specific areas of marital functioning included in the treatment procedure. Consequently, both behaviorally oriented and cognitive measures were included. Couples completed all self-report inventories independently of each other at pretest, posttest, and 1-month follow-up. At an intermediate test after five sessions partners completed only the Relationship Belief Inventory and the Communication Questionnaire.

**Target problems.** Three main problems were formulated by the couple and therapist. Target problems involved, for example, communication, sexual relationship, expression of feelings, dealing with conflicts, power issues, dependence-independence conflicts, rearing of children, extramarital affairs, lack of care or affection. These target problems were rated by the couple independently from each other on 1-to 5-point rating scales (range 3-15; a high score indicated severe problems).

**Maudsley Marital Questionnaire (MMQ).** This questionnaire (Crowe, 1978; Arrindell, Emmelkamp, & Bast, 1983) consists of 20 items relating to (a) marital, (b) sexual, and (c) general life maladjustment. Subjects
TABLE 1 Characteristics of Couples (in percentages)

<table>
<thead>
<tr>
<th></th>
<th>Communication Skills</th>
<th>Cognitive Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age</td>
<td>35.2 (SD = 8.2)</td>
<td>35.7 (SD = 8.9)</td>
</tr>
<tr>
<td>Married</td>
<td>94</td>
<td>86</td>
</tr>
<tr>
<td>Duration of relationship (in years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4-10</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>11-20</td>
<td>39</td>
<td>46</td>
</tr>
<tr>
<td>more than 20</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>Children</td>
<td>83</td>
<td>79</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>elementary</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>advanced elementary</td>
<td>39</td>
<td>53</td>
</tr>
<tr>
<td>high school</td>
<td>19</td>
<td>29</td>
</tr>
<tr>
<td>college</td>
<td>28</td>
<td>14</td>
</tr>
</tbody>
</table>

were asked to describe the way things had been for them in the past 2 weeks. Higher scores are indicative of greater adjustment problems. The marital scale is used in the present study. Scale \( \alpha \) for distressed couples = .84 (n = 179).

Communication Questionnaire (CQ). This instrument (Buunk and Nijskens, 1980; Arrindell et al., 1983) consists of the following subscales (a) intimate communication, (b) destructive communication, (c) discongruent communication, and (d) avoidance of communication. Lower scores are indicative of greater pathological communication. In the current investigation the scores are summed across the four content areas to provide a single score. Scale \( \alpha \) for distressed couples = .84 (n = 179).

Relationship Belief Inventory (RBI). This 40-item questionnaire (Eidelson & Epstein, 1982; Emmelkamp, Krol, Sanderman, & Rüphan, 1987), consists of five subscales (a) disagreement is destructive, (b) mind reading is expected, (c) partners cannot change, (d) sexual perfectionism, and (e) the sexes are different. Higher scores indicate irrational relationship beliefs. Scores are summed across the five content areas. Scale \( \alpha \) for distressed couples = .83 (n = 179).

Irrational Belief Test (IBT; Jones, 1968). We used an abbreviated 50-item version of this test (Emmelkamp et al., 1987), consisting of half of the items of each of the original subscales. Items relate to various dimensions of irrational beliefs. Scale \( \alpha = .76 \) (n = 179).
For data pertaining to the validity of these scales with the population under study the reader is referred to Arrindell et al. (1983) and Emmelkamp et al. (1987).

**Behavioral measure.** At pretest and posttest marital interaction of the couple was videotaped. After a "warming up" phase using hypothetical problems from the Inventory of Marital Conflicts (Olson & Ryder, 1970), each couple attempted to solve problems of their own. The couples' problem-solving efforts were coded by three advanced clinical psychology students, who received initial training with the coding system (described below). Coders were blind to both the treatment condition and to the time (pre-post) of the assessment. Only data of the two most experienced coders were used in the data analysis. Coders rated units of 40 seconds of the interaction for (a) self-disclosure, (b) acceptance, (c) positive problem solving, (d) agreement, (e) criticism, (f) negative problem solving, and (g) disagreement. After Z-transformations the first four categories were summed to form the variable positive verbal communication; the last three categories to form the variable negative verbal communication. In addition, coders rated aspects of nonverbal communication. Interrater reliability per item (Cohen's kappa) and interrater agreement per partner (Pm correlations) were calculated. The kappas (mean $\kappa = .56$; range .45 to .69) and correlation coefficients (mean $r = .80$; range .57 to .92) are moderate to substantial.

**Procedure**

Upon arrival a 60-minute interview was conducted by the therapist. This interview was held to explain to the couples the aim of the study and to provide the therapist with information regarding the main marital problems and to delineate three target problems in the relationship. One week later the pretest was scheduled. Both partners rated the main target problems, completed the questionnaires, and participated in a videotaped interaction test (behavioral measure). For both the communication skills training group and the cognitive therapy group, nine sessions of treatment followed, each session lasting 90 minutes. Treatment was conducted once a week. At the intermediate test after the fourth treatment session the RBI and CQ were readministered. Upon arrival both partners completed the questionnaires and the main target problems. Couples did not receive treatment between posttest and follow-up. The two treatments were as follows.

**Communication skills training.** This treatment followed the format of Emmelkamp et al. (1984) and focused on ways to improve communi-
cation between spouses. Couples were taught skills, which enabled them to talk with each other more effectively. Treatment sessions were semistandardized. Approximately half of the time was devoted to structured exercises such as listening and empathy training, spontaneous expression of feelings and assertiveness. The second half of each session consisted of the couples’ applying these skills in discussing their own marital conflicts and also included a systematic training in problem solving. Modeling, feedback, shaping, and behavioral rehearsal were used throughout treatment. The treatment had a skills-oriented focus with an emphasis on behavior change. In addition to the treatment sessions, the couples received homework assignments to practice the skills they learned during the previous session.

Cognitive therapy. This treatment was based on Ellis (1977) and Beck (1980). The first part of cognitive restructuring focused on the causal attributions or explanations that maritally distressed couples give for events that take place in marriage. Distressed couples frequently attribute responsibility for problems to their partners and are inclined to see their problems as very broad and oftentimes unchangeable. One of the aims of the cognitive therapy was to correct faulty attributions. The major focus of the last five sessions was on irrational beliefs or unrealistic expectations that couples might hold for the relationship. Marital dysfunction often arises when one or both partners adhere to absolutist beliefs about individual and interpersonal functioning. Further, Eidelson and Epstein (1982) found that a number of irrational relationship beliefs such as “disagreement is destructive to a relationship,” “partners should be able to mindread,” and “partners cannot change themselves or their relationship” may be related to marital dysfunction. In the treatment sessions and by means of homework assignments, couples were systematically trained to analyze their own conflicts in terms of Ellis’s ABC model and to replace their irrational beliefs with more constructive ones. After each session patients received homework assignments that dealt with specific issues that had been discussed in the previous session.

RESULTS

Self-report Questionnaires. Because combining partners’ scores can distort the data (Baucom & Mehlman, 1984), males’ and females’ scores were analyzed separately. Within-group differences were analyzed by t-tests for dependent samples; between-group differences were analyzed
with analysis of covariance, using the pretest score as the covariate.

Intermediate test. After four sessions communication training led to a significant reduction on the RBI (females: $t[16] = 2.48, p < .05$; males: $t[16] = 3.92, p < .001$) and CQ (females: $t[16] = -2.91, p < .005$; males: $t[16] = -3.41, p < .005$). Cognitive therapy led to a significant reduction only on the RBI for females: $t(13) = 4.81, p < .001$. The difference between both conditions was significant for the males’ data only: $F(1, 28) = 3.97, p < .05$ on the CQ and $F(1, 27) = 5.06, p < .03$ on the RBI, communication training being superior to cognitive therapy.

Posttest. Results are presented in Table 2. At the posttest both treatments led to significant improvement for females on the main target, CQ and RBI. Analyses of covariance revealed no significant difference between both treatments. As to the male data a slightly different picture emerged; both treatments led to significant differences on the main targets and CQ. In addition, cognitive therapy led to a significant improvement on the MMQ. Contrary to expectation, communication training led to a significant improvement on both cognitive measures (RBI and IBT). However, analyses of covariance revealed no significant differences between groups.

Follow-up. An analysis of changes from posttest to follow-up revealed no significant differences. Analyses of covariance showed a significant difference between both conditions on the main targets for females only: $F(1, 23) = 4.35, p < .05$, cognitive therapy being superior to communication training.

Behavioral measure. Communication training led to significant improvement on negative verbal communication, $t(31) = -4.62, p < .001$, and nonverbal communication, $t(31) = 3.37, p < .001$. Cognitive therapy did not lead to significant improvement on the behavioral measure. A significant between group difference was found on negative verbal communication: $F(1, 58) = 4.29, p < .04$, communication training being superior to cognitive therapy.

DISCUSSION

The present study is the first effort to investigate whether cognitive therapy focusing on attributions and expectations is a clinically viable treatment on its own. Results show that cognitive therapy was, on most measures, as effective as communication training. At the posttest, both treatments showed significant improvement on most self-report measures, which was maintained at follow-up. On the target problems cognitive therapy proved to be slightly superior to communication skills...
<table>
<thead>
<tr>
<th>TABLE 2</th>
<th>Means, Standard Deviations and t-tests of Treatment Groups on Self-Report Measures</th>
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<tbody>
<tr>
<td></td>
<td>Cognitive Therapy (n = 14)</td>
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<tr>
<td></td>
<td>Pretest</td>
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<tr>
<td></td>
<td>X</td>
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<tr>
<td>Main targets</td>
<td>F</td>
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<td></td>
<td>M</td>
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<td>MMQ-Marital</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td>M</td>
</tr>
<tr>
<td>CQ</td>
<td>F</td>
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<td></td>
<td>M</td>
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<tr>
<td>RBI</td>
<td>F</td>
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<td></td>
<td>M</td>
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<tr>
<td>IBT</td>
<td>F</td>
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<td></td>
<td>M</td>
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NOTE: F = females; M = males.
*p < .05; **p < .01; ***p < .005; ****p < .001.
training, the difference being significant at follow-up only. Although treatment resulted in (variable) improvements on communication measures, irrational beliefs, and target problems, this appeared to have little impact on the marital satisfaction of the couples.

One of the purposes of this study was to explore how specific therapeutic components differentially affect the outcome of treatment. More specifically: Are the effects of cognitive restructuring mediated by changes in cognitions and are the effects of communication skills training mediated by changes in communication patterns or, alternatively, are the effects of treatment due to more global processes? After four sessions, communication skills training resulted in improvement on the communication questionnaire, whereas cognitive restructuring did not. However, at the end of treatment cognitive restructuring resulted in improvements on this questionnaire comparable to communication training. In contrast, the direct observation of the marital interaction revealed that communication training led to significant decreases of negative verbal communication and a significant improvement in nonverbal communication, whereas cognitive therapy was not found to improve on these measures. The different results on questionnaire versus behavioral observation underscore the need for direct behavioral observation to evaluate communication within couples.

With respect to cognitive changes, results of females on the RBI are different from those of males. Females show changes in relationship beliefs over the course of treatment, irrespective of treatment condition. Surprisingly, males in the communication skills condition improved significantly on the RBI, whereas males in the cognitive condition did not improve significantly. This finding suggests that cognitions may change as a result of changes in communication patterns without any direct attempt to restructure irrational relationship beliefs.

Overall, the results of this clinical outcome study indicate that cognitive restructuring might be as effective as communication skills training on self-report measures, but there is little evidence that the effects of cognitive therapy are mediated by changes in cognitive processes. Rather, the results of this study suggest that changes in irrational relationship beliefs occur irrespective of the particular treatment received. The changes in communication found in the communication training condition are consistent with the view that such treatment effects are mediated by changes in communication patterns.

What clinical implications does this study have? First of all, it should be stressed that this study involved an experimental comparison of two
“dismantled” treatment procedures that are as such not quite comparable to behavior therapy and cognitive therapy as usually practiced. Of course, in clinical practice behavior therapists often make use of cognitive interventions, although this usually is not reported. To quote one of the foremost behavioral marital therapists: “It is often the case, when a technology based program is first presented, that many significant details of practice are omitted” (Weiss, 1980, p. 230). In a similar vein, cognitive therapists often make use of behavioral interventions. For experimental purposes, however, in the present study both treatment modalities had to be given in their purest form. Although both strategies succeeded in changing the respective treatment targets (e.g., communication or cognitions), it should be noted that the effects on marital satisfaction and main targets were modest. Further, with clinically distressed couples it is not always possible to consistently deliver the therapeutic model as evidenced by the fact that in the present study 5 couples had to be treated outside the experimental study because of the severity of psychopathology. Thus the experimental nature of this study limits the drawing of conclusions with respect to clinical practice.

In clinical practice it would be therapeutically wise to make a functional behavioral analysis of the relationship problems, including communication, attributional processes, and irrational (relationship) beliefs, and to devise treatment tailored to the needs of the individual couple. Neither in this nor in the studies of Baucom and Lester (1986) and Margolin and Weiss (1978) was there an attempt to match couples to treatment. It was our impression that a number of couples in the communication training condition would clearly have benefited from cognitive therapy or from a combination of both models, whereas the reverse was also true for couples who received cognitive therapy. To study whether the failures of one model may benefit the other model, a crossover design can be used. This implies that couples are first treated with one approach (e.g., communication training). Those couples with whom that particular treatment approach fails are then treated with the other approach (e.g., cognitive therapy). Half of the couples will receive both treatments in the reverse order (i.e., first cognitive therapy, then communication training). Such a study could answer the question whether failures of one particular treatment approach are better off with an alternative approach.

One of the most important research areas is to investigate which characteristics of couples might interact with type of treatment. It might be reasonable to hold that communication training is indicated when
both partners lack the necessary communication skills and, on the other hand, that cognitive restructuring is indicated when both partners hold irrational (relationship) beliefs and expectations. However, the situation becomes more complex if only one of the partners lacks adequate communication skills whereas the other is highly irrational in his or her (relationship) beliefs. In the latter case individual therapy focusing on communication training for one partner and irrational beliefs for the other might be more appropriate. This indicates that studies are needed that take into account not only differences between couples but also individual differences within couples. Although such studies will be difficult to realize, it is likely that such efforts will produce more new knowledge than studies comparing different treatment procedures irrespective of couples' and individuals' characteristics.

Conceptually, the present study lends little support to the notion that couples should first have insight before behavior can change; in the behavioral conditions couples improved without any specific attempt at changing irrational beliefs or faulty attributions. On the other hand, the present results show that cognitive interventions on their own may have something to offer that lends support—indirectly—to more cognitively oriented models of marital distress (Jacobson, 1984; Weiss, 1984).

An important area for further research is the assessment of cognitions involved in relationship problems. We are not quite satisfied with the current measures available, including the RBI (Emmelkamp et al., 1987). In our view it is much too early to use the RBI for clinical purposes, for example, for deciding whether couples should receive cognitive therapy or not. A lot of innovative work has yet to be done in developing cognitive measures to assess irrational relationship beliefs, attributional processes, and self-statements that are reliable, valid, and clinically meaningful. There is still a long way to go.

REFERENCES


