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# Efficacy and Specific Effects Data on New Treatments: A Case Study Strategy With Mixed Anxiety–Depression

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The case study research strategy presented here can be used to develop new psychotherapeutic treatments, test theorized mechanisms of action, and obtain initial outcome data of the type needed to support treatment outcome grant applications. The strategy is illustrated by 2 case studies of a new psychotherapeutic intervention for patients with coexisting generalized anxiety disorder and major depression as described in the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; American Psychiatric Association, 1987). The treatment is a modification and integration of existing treatments for panic disorder (Barlow & Craske, 1989) and for major depression (Klerman, Weissman, Rounsaville, & Chevron, 1984).



This article illustrates a case study research strategy that can yield preliminary efficacy data on psychotherapeutic treatments, as well as examine theorized mechanisms of action of treatments. Preliminary efficacy data on new treatments are a critical link to conducting controlled trials of potentially important psychotherapeutic interventions. However, as psychotherapy researchers have noted, a handicap to psychosocial treatment outcome research is that evidence for a treatment's efficacy is needed to support grant applications (e.g., to the National Institute of Mental Health [NIMH]) to study the treatment's efficacy. Furthermore, essentially no funding sources are available for preliminary efficacy studies of psychosocial treatments. The situation is a paradoxical one that differs from the circumstances affecting psychopharmacological treatment research, in which drug companies financially support and actively recruit investigators to do preliminary drug trials. The results of such trials are often subsequently used by investigators to support NIMH grant applications on drug treatments.

Using single-case designs to develop and study new treatments is not a novel idea. Wolpe's (1958) pioneering and broadly influential work on the technique of systematic desensitization, based on a series of 210 cases, is one notable example (Barlow, Hayes, & Nelson, 1984). Historically, however, single-case experimental designs have been used almost exclusively to study treatments derived from behavioral theories and principles, as illustrated by the examples used in major textbooks on single-case design (e.g., Barlow & Hersen, 1984; Hersen & Barlow, 1976; Kazdin, 1982). Thus, our goal in this article is to illustrate the application of single-case methodology to a treatment that is not primarily behavioral and to thereby attend investigators to the utility of such methods for preliminary studies of diverse forms of psychotherapy. In addition, one of our primary interests in conducting the case studies described here is to test a specific effects model of the therapeutic action of treatments for anxiety and for depression.

We used a single-case experimental design strategy to study a treatment for patients who have both an anxiety and a mood disorder as described in the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; *DSM–III–R*; American Psychiatric Association, 1987). The strategy was developed to test the hypothesis that two existing treatment approaches, one for panic disorder (Barlow & Craske, 1989) and one for major depression (Klerman, Weissman, Rounsaville, & Chevron, 1984), could be modified and combined to create a useful treatment for patients with coexisting *DSM–III–R* generalized anxiety disorder (GAD) and major depression (MD). We further hypothesized that, because the combined treatment would focus on both anxiety and depression, it would be more effective for such patients than a treatment that targeted only one of the disorders. The foregoing hypothesis implied the additional hypothesis that each of the treatments would show some specific effect on the symptoms for which the treatment was developed; that is, the anxiety treatment component would have relatively more impact on symptoms of anxiety than depression, and the reverse would be true for the depression treatment component. The hypothesis is presented in schematic form in Figure 1.

The essence of our research strategy is to apply the same case study protocol in a replication series of cases, each of which is designed to provide data on outcome and on the pattern of symptom change associated with administration of each component of the treatment. The strategy was tailored to certain

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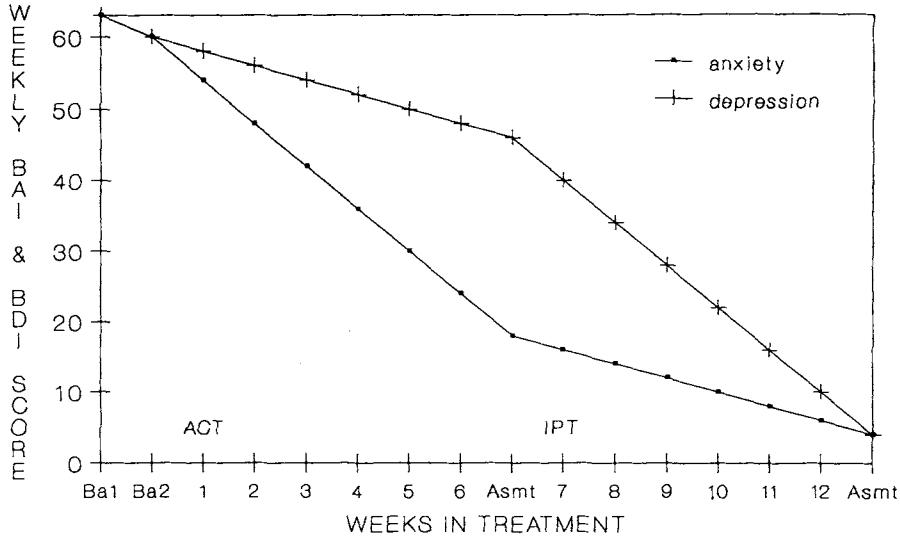


*Figure 1.* Hypothesized differential rates of change of symptoms of anxiety and depression during the anxiety control (ACT) component of the treatment and the Interpersonal Psychotherapy of Depression (IPT) component of the treatment. (BAI = Beck Anxiety Inventory; BDI = Beck Depression Inventory; Ba1 = Baseline Week 1; Ba2 = Baseline Week 2; Asmt = assessment week.)

features of our situation, but it can be modified for other situations. A "skeleton" strategy is presented that can be enhanced with more patients per therapist or with more therapists, when such resources are available. The elements of the strategy are listed next. References indicate where more extensive discussions of relevant aspects of case study methodology can be found.

1. Hypotheses were generated that the case study protocol was designed to examine, either statistically (e.g., by pooling data from a series of case studies) or by visual inspection (Barlow & Hersen, 1984; Kazdin, 1982). The hypotheses determined the design of the case study protocol.

2. An A/B/A/C/A/A single-case design was used in which A = assessment (2-week baseline); B = treatment for GAD; A = assessment (after six sessions of anxiety treatment); C = treatment for MD; A = assessment (after six sessions of depression treatment); and A = assessment (6-month and 1-year follow-ups). Depending on the hypotheses, when two treatments are administered, as they were in our cases, counterbalancing the order of the treatments across cases might be the optimal design because it controls for the influence of order effects on the dependent variables.

3. Patients were matched on intake diagnoses and on other potentially outcome-relevant demographic features. Patients in our case studies were required to meet *DSM–III–R* criteria for both GAD and MD; have about equally severe symptoms of GAD and MD; have no other clinically significant diagnoses; and be of similar age and marital, parental, and employment status.[1] The matching strategy is the "conservative approach" described by Barlow and Hersen (1984).

4. An assessment battery was used that included continuous self-report assessment (Kazdin, 1982) of dependent variables and diagnosticians' assessments of dependent variables by means of a structured interview. The main dependent variables in our cases were diagnostic and symptom measures of anxiety and depression. Patients made global ratings of their anxiety and depression daily, starting from the baseline assessment period. They also completed the Beck Anxiety Inventory (Beck, Epstein, & Brown, 1988) and the Beck Depression Inventory (Beck, Steer, & Garbin, 1988) weekly, starting from the baseline period. Therapist measures were not used because two of the investigators (Moras and Telfer) were the therapists and we assumed that measures we completed would be biased. Ideally, the therapists would be neither the investigators nor the developers of the treatment.

5. All assessments for a case were performed by the same diagnostician. To reduce error variance across the repeated clinical ratings on each case, the same diagnostician performed each assessment on any one patient, but different diagnosticians were used across cases.

6. Two therapists were used, each of whom treated an equal number of patients of each gender. A clinical replication strategy was used in which a series of case studies are completed, using the same design (Barlow et al., 1984; Barlow & Hersen, 1984; Hersen & Barlow, 1976). In a clinical replication strategy,

[1] When a primary goal is to obtain generalizable outcome findings from a series of cases studies, heterogeneity of cases on demographic variables is preferable to matching (Hersen & Barlow, 1976). Our interest in a process question (the relationship between changes in anxiety and depression over the course of treatment) led us to match on demographic variables. We thought that a person's typical environmental stressors caused by basic social responsibilities (e.g., employment, parenting, or marriage) would affect day-to-day fluctuations in anxiety and depression; therefore, we controlled for marital, parental, and employment status and for age group.

more than one therapist participates, and an equal number of patients of each gender are treated by each therapist, to obtain data on the generalizability of findings. Two female therapists were a given in our situation. Ideally, with only two therapists available, one would have been male and one female, and each would treat an equal number of patients of each gender.

7. A treatment manual was created that specifies the conduct of the treatment. A treatment manual is required to teach the therapists how to conduct the treatment that is studied, help standardize each therapist's administration of the treatment across the case studies, and describe the treatment intervention to facilitate replication by other investigators.

8. Treatment sessions were audiotaped. Audiotapes are needed to evaluate the extent to which the designated treatment approach is adhered to by each therapist.

9. Outcome data from another treatment were compared with outcome data from the case studies to evaluate the efficacy of the new treatment. Case study outcome data were compared with outcome data on diagnostically similar cases who received only an anxiety-focused treatment for GAD (Barlow, Rapee, & Brown, 1992). The comparison was done to evaluate the efficacy of the new treatment, specifically its impact on anxiety and depression, compared with a treatment for anxiety only. This component of the research strategy is similar to Sidman's (1960) method of independent verification.

## Method

This section describes how the foregoing strategy was applied in two completed case studies.

### *Patients*

Patients were selected from those evaluated at an anxiety disorders specialty clinic. The main inclusion criterion was meeting diagnostic criteria for *DSM-III-R* GAD and MD, based on a structured diagnostic interview, the Anxiety Disorders Interview Schedule–Revised (ADIS–R; Di Nardo & Barlow, 1988). The ADIS–R includes a 9-point severity rating scale (0–8) that is used to indicate the clinical severity of each diagnosis assigned. Any case that had comorbid GAD and MD of approximately equal clinical severity and no other clinically significant disorder could be selected.

Two cases were selected and treated, each by a different therapist. The patients were well matched diagnostically as well as on potentially relevant sociodemographic characteristics (e.g., marital and parental status, age, and employment).

*Case 1.* The patient was a woman in her early 40s who had three children (ranging in age from 7 to 15). She held a medically oriented job. Her complaints were waking up and not feeling like getting out of bed, palpitations, poor appetite, and low energy level. She also reported symptoms consistent with excessive worry about financial matters and about inadvertently harming someone by making mistakes in her job. When asked about relationships in her life, she said that her husband was hard to live with and that she felt that she was suppressing anger, although he did not realize that anything was wrong. Her complaints had been going on for about 3 months, but she reported having experienced them intermittently for 10 years. Her *DSM-III-R* diagnoses and their clinical severity were Major Depressive Episode (single, moderate) 5 and Anxiety Disorder, Not Otherwise Specified 4.[2]

*Case 2.* The patient was a man in his mid-30s who had three children (ranging in age from 4 to 12). He worked full time in a semiskilled position. His complaints were "breaking down easy and crying a lot," a "no care attitude," feeling nervous, and feeling like running from his job. When asked about relationships in his life, he said that he and his wife "seemed to be going their own separate ways." However, he then quickly negated the statement by saying that they didn't seem to be growing apart; rather they seemed to be closer but more independent. The diagnosis based on two independent structured diagnostic interviews was co-principal Major Depression Episode (recurrent, moderate) 5 and GAD 5.

### *Therapists*

Two therapists (Karla Moras and Leslie A. Telfer) conducted the treatments. The first is an experienced clinical psychologist; the other was, at the time of the study, a fourth-year graduate student in clinical psychology who had considerable clinical experience.

### *Instruments*

*Hamilton Anxiety Rating Scale (HARS).* The HARS (M. Hamilton, 1959) is a clinician-rated 13-item scale that is used in clinical research to assess symptoms conventionally accepted as signifiers of anxiety. The possible score range is 0–44. The HARS is included in the ADIS–R interview. HARS ratings were made at each assessment point by a diagnostic interviewer.

*Hamilton Rating Scale for Depression (HRSD).* The HRSD (M. Hamilton, 1960) is a clinician-rated instrument that is commonly used to assess symptoms of depression. The 24-item version of the HRSD (Guy, 1976) was used in this study (the possible score range is 0–74). The HRSD is included in the ADIS–R interview. HRSD ratings were made at each assessment point by a diagnostician.

*Beck Anxiety Inventory (BAI).* The BAI (Beck, Epstein, & Brown, 1988) is a 21-item self-report measure of somatic and cognitive symptoms of anxiety. The possible score range is 0–63. During treatment, patients completed the BAI weekly, immediately before each treatment session.

*Beck Depression Inventory (BDI).* The BDI (Beck, Steer, & Garbin, 1988) is a 21-item, self-report measure of cognitive, mood, and neurovegetative symptoms of depression. The possible score range is 0–63. It was completed according to the same schedule as that used for the BAI.

*Weekly Record of Anxiety and Depression (WRAD).* The WRAD (Barlow, 1988) is a self-report instrument that obtains a patient's daily global ratings of depression and average anxiety level, on a scale ranging from *none* (0) to *as much as you can imagine* (8). Patients completed the WRAD every day, starting from the baseline assessment through the posttreatment assessment (i.e., after the first 12 sessions of treatment).

### *Treatment*

The treatment consisted of a modification of Barlow and Craske's (1989) cognitive–behavioral treatment for panic disorder and of Interpersonal Psychotherapy of Depression (IPT) as described by Klerman et al. (1984). The combined treatment included an anxiety control component for GAD and IPT for depression.

*Anxiety control treatment (ACT) component.* ACT consisted of

[2] The case was selected for the study although her anxiety diagnosis was *DSM-III-R* Anxiety Disorder Not Otherwise Specified, rather than GAD. She was accepted because although the diagnostic staff disagreed about whether she met the two spheres of worry criterion required for GAD, evidence for the criterion was presented.

three modified components of Barlow and Craske's (1989) Panic Control Treatment (PCT), which includes cognitively and behaviorally focused interventions to reduce the frequency and intensity of panic attacks. PCT also is designed to teach skills and strategies for managing generalized anxiety and tension.

When used to treat panic disorder, the components of PCT are information about anxiety and panic attacks, breathing retraining, cognitive restructuring, and interoceptive exposure. Two components, breathing retraining and cognitive restructuring, are anxiety management strategies that can be readily applied to GAD, given that it is defined in the *DSM–III–R* primarily by cognitive (excessive worry and vigilance) and somatic symptoms. The interoceptive exposure component is theoretically more specific to panic disorder and was not used in ACT. We modified the information component of PCT slightly for use in ACT by eliminating sections that specifically explain the physiology of panic attacks.

The breathing retraining component of ACT essentially involved teaching the patient a way to (a) slow his or her breathing when experiencing symptoms of anxiety, and (b) refocus attention away from anxiety-provoking thoughts. Slowing breathing can reduce the intensity of somatic symptoms associated with anxiety, such as lightheadedness. The cognitive restructuring component involved teaching the patient how to identify habitual anxiety-provoking thoughts and then how to evaluate the validity of the negative predictions about future events that characterize anxiety-provoking thoughts.

*IPT.* A short-term treatment (recommended length is between 12 and 16 sessions) for outpatient depressive disorders such as MD, IPT (Klerman et al., 1984) is based on the premise that symptoms of clinical depression are either caused or maintained by various types of interpersonal problems. It is a very focused and problem-solving–oriented treatment.

The main techniques of IPT are (a) identifying an interpersonal problem area that seems to be most directly involved in a patient's current depressive episode and (b) using therapist interventions for that problem area as described in the IPT manual. The four IPT problem areas are grief, interpersonal role disputes, role transitions, and interpersonal skills deficits.

The problem area that seemed most appropriate for both cases was interpersonal role disputes, with the focal role dispute being within the marriage. In each case, the patient experienced dissatisfaction in the marital role but was unable or unwilling to express that dissatisfaction. Although Case 1 appreciated the opportunity to discuss her disappointments in her marriage with the therapist, she stopped short of actually renegotiating her role vis à vis her husband. It is unclear whether she would have eventually responded to encouragement to do so had the therapy gone on longer; however, she declined the offer of additional sessions. Case 2, on the other hand, was able to initiate direct discussions with his wife about his wishes for changes in their relationship. He had some increased satisfaction with the relationship, as well as reduced depression and increased hopefulness about change in their relationship.

*Combined treatment (ACT and IPT).* The standard protocol followed for each case study was six weekly sessions of ACT followed by 1 week with an assessment interview instead of a session, then six weekly sessions of IPT followed by an assessment interview 1 week after the sixth IPT session. Each case also had a follow-up assessment 1 year after the initial evaluation.

At the first treatment session, patients were told that their treatment would consist of two parts; one focused on the anxiety-related problems that they were experiencing, and one focused on depression. They were told that the anxiety-focused treatment would be first, that the depression-focused component would follow, and that the entire treatment was designed to be 12 weekly sessions. At Session 9 or 10, treatment termination was discussed, and patients were asked their opinion of their readiness to terminate. They were told that additional sessions were possible and that the upcoming assessment (after Session 12) could be used to help make a decision. The research plan allowed for 6 to 10 more sessions of IPT, although there was a 12-session "outcome" assessment after the 12th session, regardless of whether the patient wanted additional sessions.[3]

## Results

### *Pattern of Change in Anxiety and Depression Symptoms*

Figures 2 and 3 show the weekly BAI and BDI scores of Cases 1 and 2, beginning at baseline and continuing to the post–Session-12 assessment. Figures 4 and 5 show the weekly mean of each patient's daily global ratings of depression and of their "average" level of anxiety. In general, the ratings on both measures show that symptoms of anxiety and depression were not differentially responsive to the anxiety- and the depression-focused components of the treatment; rather, in both cases the symptoms primarily changed in tandem.

### *Outcome*

*Efficacy.* For the sake of brevity, only two outcome measures are reviewed here, the BDI and BAI scores and the HARS and HRSD scores. The BAI and BDI scores indicated that Case 2 showed remission of anxiety symptoms and mild depression at the end of treatment (see Beck & Steer, 1992a, 1992b, for severity guidelines for BAI and BDI scores) and clinically significant reduction in symptoms from pre- to posttreatment (Figure 3). The BDI and BAI scores for Case 1 were less positive. Although the patient showed remission of both anxiety and depression symptoms at Session 10, the symptoms began to increase again as termination approached. At the posttreatment assessment, anxiety was moderately severe and only slightly lower than at the pretreatment baseline period; depression was mild (Figure 2).

Table 1 shows pre- and posttreatment HARS and HRSD scores for Cases 1 and 2. Both cases showed small but comparable improvement in anxiety. Both showed comparable, slightly greater improvement in depression than in anxiety.

*Comparative efficacy.* The combined treatment was developed on the basis of the logical premise that if treatments have specific effects on anxiety and depression, then a treatment that combines anxiety-focused and depression-focused components will be associated with greater improvement in patients with comorbid anxiety and depressive disorders, compared with a treatment that focuses on anxiety or depression alone. We examined the premise by comparing the posttreatment HARS and HRSD scores of both cases to two diagnostically and symptomatically similar cases who received up to 15 sessions of an anxiety-focused, cognitive–behavioral treatment for GAD (Barlow et al., 1992). The anxiety treatment consisted of

[3] Up to 10 more sessions of IPT were offered to make the IPT component of the combined treatment comparable to the 12- to 16-session limit specified in the IPT manual and to explore the clinical speculation that more than 6 sessions for depression would be needed.

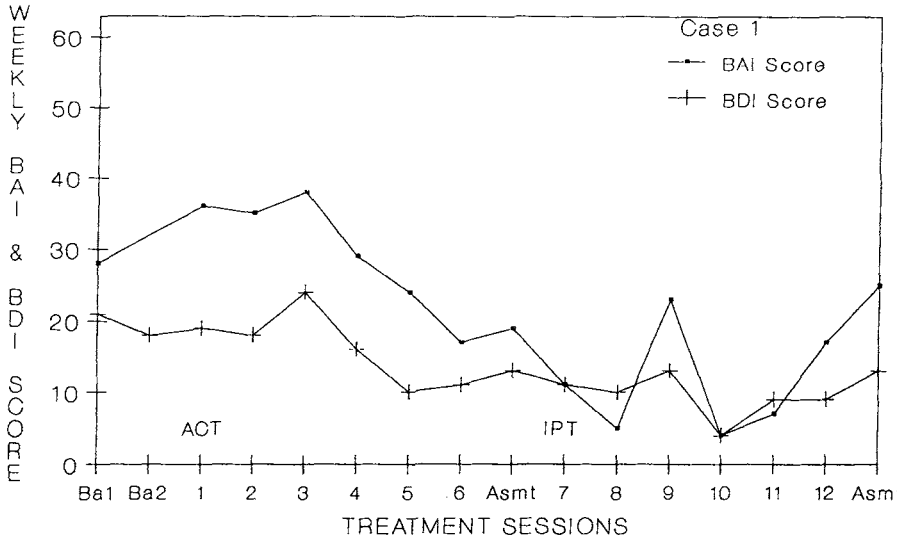


*Figure 2.* Weekly changes in Beck Anxiety Inventory (BAI; Beck, Epstein, & Brown, 1988) and Beck Depression Inventory (BDI; Beck, Steer, & Garbin, 1988) scores for Case 1. (Ba1 = Baseline Week 1; Ba2 = Baseline Week 2; ACT = anxiety control treatment; Asmt = assessment week; IPT = Interpersonal Psychotherapy of Depression treatment.)

progressive muscle relaxation and cognitive restructuring; thus, it was similar to the ACT treatment used in the case studies that consisted of breathing retraining (which can facilitate relaxation) and cognitive restructuring.

As shown in Table 1, the two case studies, compared with two diagnostically similar cases who received only anxiety-focused treatment, showed small but comparable improvement in anxiety. However, inspection of the HRSD posttreatment scores suggests that the case study patients improved somewhat more in depression than did the comparison patients who were treated only for GAD (and for up to three sessions more than the two case studies). Thus, inspection of the pattern of posttreatment ratings suggests the potential value of the combined treatment for patients with comorbid GAD and MD, at least when an interpersonal problem such as marital distress is also present.

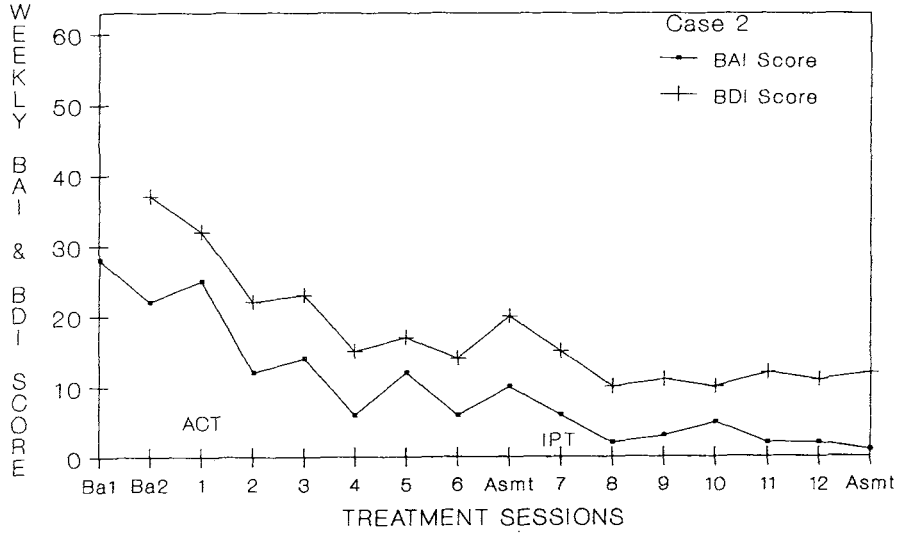


*Figure 3.* Weekly changes in Beck Anxiety Inventory (BAI; Beck, Epstein, & Brown, 1988) and Beck Depression Inventory (BDI; Beck, Steer, & Garbin, 1988) scores for Case 2. (Ba1 = Baseline Week 1; Ba2 = Baseline Week 2; ACT = anxiety control treatment; Asmt = assessment week; IPT = Interpersonal Psychotherapy of Depression treatment.)

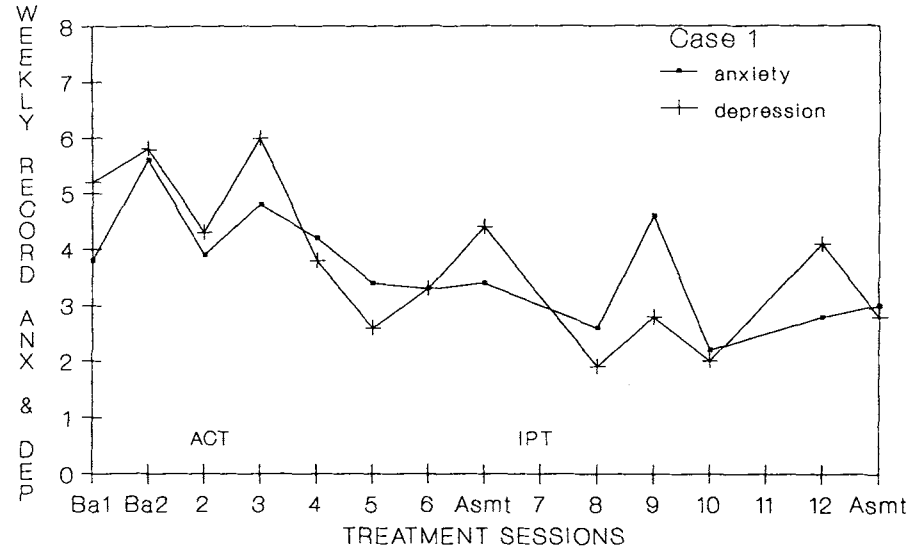


*Figure 4.* Weekly changes in self-reported anxiety and depression (Weekly Record of Anxiety and Depression; Barlow, 1988) for Case 1. (ANX = anxiety; DEP = depression; Ba1 = Baseline Week 1; Ba2 = Baseline Week 2, which also was the week preceding Session 1; ACT = anxiety control treatment; Asmt = assessment week; IPT = Interpersonal Psychotherapy of Depression treatment.)

The posttreatment HARS and HRSD scores (see Table 1) also indicate that both case study patients still had clinically significant symptoms of anxiety and depression after 12 sessions of the combined treatment. The same was true of the diagnostically comparable patients from the GAD outcome study. The results suggest that such patients might need longer treatment of the types offered or alternative treatments.[4]

Some data were obtained on the preceding speculation. Case 2 accepted the offer for additional sessions after the posttreatment assessment that followed the depression component of the treatment. He attended 10 more sessions, for a total of 16 sessions of IPT. A termination assessment indicated that he no longer had clinically significant depression (he had an HRSD score of 6), and his HARS score (12) was also lower than his score at the prior 12-session assessment (17). At a follow-up assessment 6 months after treatment was terminated (and 1 year after the intake assessment), the patient's HRSD score was 1 and the HARS score was 6, indicating that clinically significant symptoms were no longer present. Also, he no longer met criteria for any *DSM–III–R* disorder. Thus, for Case 2, the 6-month treatment period (22 weekly sessions) was associated with recovery 6 months later. However, Case 1, who had only 12 sessions (3 months) of treatment, was also recovered at her assessment 1 year after intake. Unfortunately, interpretation of her data in terms of length of treatment required for comorbid GAD and MD is complicated by the fact that she was taking Prozac at the 1-year assessment. However, the fact that she sought additional treatment is consistent with the conclusion that 12 weekly sessions of the treatments offered is not adequate for such patients.

## Discussion

We have presented a research strategy based on single-case methodology that can be used to generate preliminary efficacy data on new treatments as well as to examine theory-based hypotheses. The research strategy addresses one of the main impediments to preparing fundable grant applications for studies of the efficacy of promising new psychosocial treatments (i.e., the need for preliminary efficacy data). The problem is a serious one because no reliable source of funds currently is available for conducting needed developmental work on psychosocial treatments.

This report included no statistical tests of outcome differences between anxious and depressed patients who received the new combined treatment for GAD and MD (ACT and IPT) and those who received a cognitive–behavioral treatment focused only on GAD. Also, our case study methodology did not allow us to evaluate the effectiveness of the new treatment using the prevailing scientific standard that requires outcome comparisons between treated cases and diagnostically similar cases who receive no treatment, or a placebo treatment, for the same period of time.

One way to address both of the preceding limitations is to conduct a replication series of cases (i.e., "clinical replication"; see Barlow & Hersen, 1984), pool the data, and do statistical tests on those cases compared with (a) similar cases who were treated in a group outcome study and (b) no-treatment or placebo-treated controls. This approach was partially illustrated by our comparisons of the case study data with data from diagnostically similar patients who participated in a traditional

[4] Noting evidence such as this that existing cognitive–behavioral treatments for GAD yield less than optimal responses for some GAD patients, another treatment approach for GAD is being developed at the Center for Stress and Anxiety that incorporates several anxiety-focused interventions (Craske, Barlow, & O'Leary, 1992).

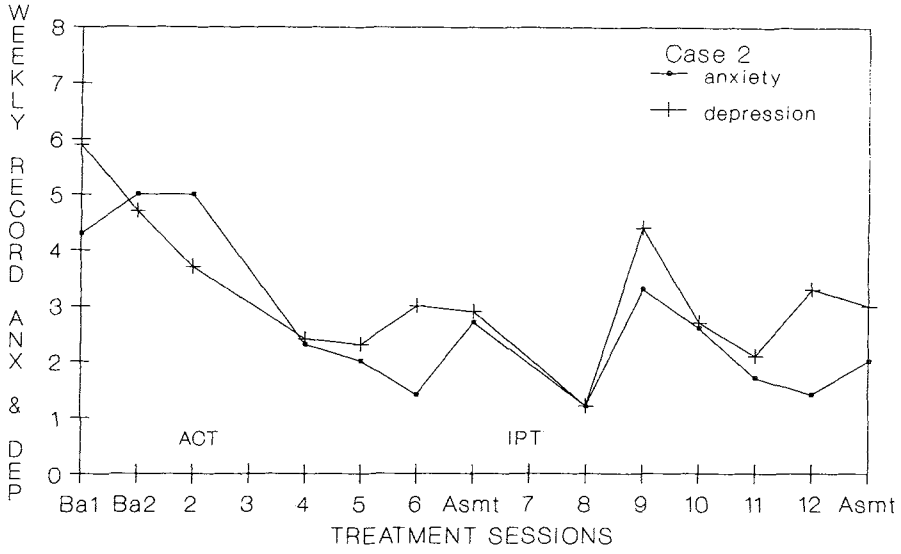


*Figure 5.* Weekly changes in self-reported anxiety and depression (Weekly Record of Anxiety and Depression; Barlow, 1988) for Case 2. (ANX = anxiety; DEP = depression; Ba1 = Baseline Week 1; Ba2 = Baseline Week 2, which also was the week preceding Session 1; ACT = anxiety control treatment; Asmt = assessment week; IPT = Interpersonal Psychotherapy of Depression treatment.)

treatment outcome study. Power analysis calculations (Kraemer & Thiemann, 1987) can be used to determine needed sample sizes for such statistical tests.

One strength of case study methodology was illustrated by the failure of the continuous self-report data to show the hypothesized differential impact of the anxiety-focused component of the treatment on anxiety symptoms and of the depression-focused component on symptoms of depression. It has been said that a single case can provide evidence that refutes a hypothesis by documenting a decisive counterexample to a generalization (Edelson, 1988). Although the statement might be arguable (i.e., reasons why a particular case study did not pro-

Table 1
*Outcome Comparison of Case Studies and Diagnostically Similar Cases Treated Only for GAD*

| | | | Case studies[a] | | | |
|---|---|---|---|---|---|---|
| | Anxiety Tx only: GAD + MD or D + Marital[b] ($n$ = 2) | | Case 1 AnxNos + MD + Marital[b] ($n$ = 1) | | Case 2 GAD + MD + Marital[b] ($n$ = 1) | |
| Measure | Pre-Tx | Post-Tx | Pre-Tx | Post-Tx | Pre-Tx | Post-Tx |
| Hamilton Anxiety Rating Scale | | | | | | |
| *M* | 24.7 | 21.5 | 22 | 19 | 23 | 17 |
| Range | 22–27.5 | 19–24 | | | | |
| Hamilton Rating Scale for Depression[c] | | | | | | |
| *M* | 24.3 | 25 | 25 | 17 | 25 | 18 |
| Range | 22–26.5 | 20–30 | | | | |

*Note.* Tx = Treatment; GAD = Generalized Anxiety Disorder as described in the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; *DSM–III–R*; American Psychiatric Association, 1987); MD = *DSM–III–R* Major Depressive Episode; D = *DSM–III–R* Dysthymia; AnxNOS = *DSM–III–R* Anxiety Disorder Not Otherwise Specified (i.e., GAD with one sphere of worry). Cases from Barlow et al. (1992) who received up to 15 sessions of progressive muscle relaxation and cognitive restructuring for GAD.
[a] Patients treated for both GAD and MD. [b] Marital = marital problems at intake. [c] 24-item version (Guy, 1976).

vide a valid test of a hypothesis can usually, perhaps always, be found), failure to support a hypothesis using a case study design that has high internal validity has an inherent persuasiveness that tends to prompt one to revise or refine theory. The foregoing phenomenon illustrates the unique efficiency of single-case methodology for treatment development research and for mechanisms of action studies.

What does the failure of our cases to demonstrate specific symptom effects of two symptom-specific treatments suggest? The finding was not surprising from at least two perspectives: (a) the general failure in the literature to detect hypothesized specific effects of treatments (e.g., Imber et al., 1990; Simons, Garfield, & Murphy, 1984), perhaps particularly with generalized emotional disorders involving negative affect (L. A. Clark & Watson, 1991) such as GAD (Barlow et al., 1992), and (b) evidence that self-reported anxiety and depression ratings are highly correlated (Gotlib & Cane, 1989). The failure to find the predicted specific effects opens the door to numerous speculations on possible reasons for the failure. We offer only two: One is a psychological hypothesis about mechanisms of action of symptom-focused psychotherapeutic interventions; the second posits a relationship between anxiety and depression based on emotion theory.

The psychological hypothesis accepts the premise that anxiety and depression have distinctive aspects, as well as overlapping features (e.g., D. A. Clark, Beck, & Stewart, 1990). The hypothesis also accepts the premise that the distinctive aspects of anxiety and depression can be specifically affected by specifically aimed interventions. The failure to find evidence for specific effects is hypothesized to be due to the impact of a person's psychological context on psychotherapeutic interventions. The construct of psychological context refers to features of psychological functioning that would affect any learning process, features such as verbal intelligence, ability to attend to verbal content, and spontaneous focus of attention (e.g., patients whose attention is predominantly drawn to interpersonal cues rather than to verbal cues and who might, therefore, attend more to how the therapist says something rather than to what the therapist says). The basic premise is that a person's psychological context is a very powerful filter through which our current methods of verbal dyadic intervention must pass. This filter can deflect, diffuse, and recode interventions that, in the therapist's mind, are clearly and precisely aimed at specific symptoms.

Alternatively, from the perspective of emotion theory, our failure to find evidence for specific effects of the anxiety-focused and depression-focused treatment components can be attributed to the underlying nature of depression (Barlow, 1988, 1991a, 1991b). In this theory, both anxiety and depression are characterized fundamentally by the activation of the sense of uncontrollability over negative life events. These negative affective states share similar cognitive and biological features. However, these states may differ in terms of action tendencies. For example, the psychomotor slowing of depression may reflect "giving up" in the face of an onslaught of negative events, whereas a continuing response set of preparation and coping would be more characteristic of anxiety. Investigators working in the area of depression from a more cognitive perspective have arrived at a very similar formulation (Alloy, Kelly, Mineka, & Clements, 1990).

Inferring from the foregoing emotion theory, specific treatment effects were not found for one of two reasons: (a) the anxiety- and the depression-focused treatment components affected the shared features of anxiety and depression, not their different action tendencies or (b) our self-report measures tapped only the shared features of anxiety and depression (but see D. A. Clark et al., 1990), and measures of the different action tendencies would have shown specific responsiveness to the treatment components.

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