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Anxiety and Depression Change Together During Treatment

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Abstract

Anxiety and depression frequently co-occur and are viewed by many theorists as aspects of a unitary disorder. In contrast, the diagnostic nomenclature views anxiety and depression as discrete disorders, and current protocols for anxiety and depression treat the disorders separately. To test the hypothesis (based on the unitary view) that anxiety and depression are tightly related and change together over the course of treatment, we monitored week-by-week changes in symptoms of anxiety and depression in 58 outpatients treated naturalistically in private practice with cognitive-behavior therapy. Results were more supportive of a unitary than a discrete view, and showed that anxiety and depression were highly predictive of one another over the course of treatment. These findings lend support to a view of anxiety and depression as more unitary than discrete, and suggest the need to consider changes in the diagnostic nomenclature and in treatment strategies for anxious depressed patients.

Anxiety and Depression Change Together During Treatment

The question of whether anxiety and depression are discrete disorders or variants of a single disorder has important implications for the classification, description, understanding, and treatment of psychopathology. The discrete view of anxiety and depression is represented by the current diagnostic nomenclature, which views anxiety and depression as distinct disorders (American Psychiatric Association, 1994). In addition (and not unrelated), psychosocial treatment for anxiety and depression currently is guided by protocols for discrete disorders.

In contrast, the unitary view of anxiety and depression proposes that anxiety and depression are symptoms of a single underlying disorder. For example, Barlow (1991) proposes that "neurotic depression [is] the chronologically later and more severe expression of anxiety" (p. 1). The unitary view is supported by evidence that anxiety and depression are frequently comorbid in a single episode of illness (Brown, Campbell, Lehman, Grisham, & Mancill, 2001; Freud; 1894/1959; Hiller, Zaudig, & von Bose, 1989) and over the lifespan of individuals (see review in Alloy, Kelly, Mineka, & Clements, 1990), and by the facts that depression and anxiety share common neurohormonal markers (Heninger, 1990) and that certain pharmacological treatments, such as selective serotonin reuptake inhibitors

(SSRIs), are effective in alleviating symptoms of both disorders (e.g., DeVane & Sallee, 1996).

Several important psychosocial theories view anxiety and depression as having both unitary and discrete aspects. The tripartite theory (Clark & Watson, 1991) proposes that anxiety and depression share a substantial component of general affective distress. At the same time, Clark and Watson view anxiety and depression as distinct in that only depressed individuals experience anhedonia and only anxious individuals experience somatic arousal. Alloy et al. (1990) argue that depressed and anxious patients have numerous overlapping symptoms and that both types of patients feel hopeless about their inability to control important outcomes; at the same time, Alloy et al. propose that certain symptoms are unique to syndromes of anxiety and depression. Beck's (1976) cognitive theory proposes that anxiety and depression share a common mechanism (both arise when stressful life events activate pathological schema), and that they differ in the content of their cognitions (Beck, Brown, Steer, Eidelson, & Riskind, 1987).

Studies of the process of change in anxiety and depression over the course of treatment have yielded mixed results, with some supporting the discrete view and others supporting the unitary view. Supporting the discrete view, McLean, Woody,

Taylor, and Koch (1998) showed that depressed panickers who were successfully treated for panic did not show changes in depression. Supporting the unitary view, Laberge, Gauthier, Cote, Plamondon, and Cormier (1993) found that panickers who had a secondary depression showed remission of both panic and depression when they were treated for panic. Also in support of the unitary view, Moras, Telfer, and Barlow (1993) in a study of four cases, showed that anxiety and depression changed together; we have observed this pattern in our own clinical work as well.

In the study described here, we tested the hypothesis, drawn from the unitary view, that anxiety and depression change together, not separately, during treatment, by monitoring symptoms of anxiety and depression weekly in outpatients who were treated naturalistically with cognitive-behavior therapy. We examined patients' self-reported anxiety and depressive symptoms, which were assessed with the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979) and the Burns Anxiety Inventory (Burns & Eidelson, 1998). Based on our own clinical observations and on the fact that the unitary hypothesis appears to have stronger theoretical and empirical support than the discrete hypothesis, we made two predictions. First, we predicted that when anxiety and depression were measured at the same point in time they would be more highly correlated than when they were measured at different points in time. This

prediction is based on the notion that ebbs and flows in anxiety and depression ought to follow the same rhythm or time course if the two symptoms are aspects of a single disorder but would not be expected to change together if they are symptoms of discrete disorders. To understand this point, consider two physical symptoms: muscle pain and fatigue. If the patient has these symptoms because they are symptoms of a single disorder (influenza), the symptoms ought to be more highly correlated when measured at a single point in time than when they are measured at different time points. In contrast, if the patient has the symptoms because he has two separate disorders (arthritis which causes muscle pain and anemia which causes fatigue) then we would not expect the two symptoms to be more highly correlated when they are measured at the same time than when they are measured at different times. Second, we predicted that each set of symptoms (anxiety and depression) would serve as a powerful predictor of the other at any point in time.

As we measured anxiety and depression in our patients, we confronted the problem that past research has frequently shown measures of anxiety and depression to be highly correlated (Gotlib & Cane, 1989; Kendall & Ingram, 1989). The high correlation of measures of anxiety and depression may reflect the fact that items on the measures assess the element of negative affect, described by Clark and Watson (1991) as a

shared component of anxiety and depression. Or the high correlation of the measures may reflect the fact that the measures often include symptoms that are common to anxiety and depression (cf. Alloy et al., 1990). Therefore, we evaluated whether any close relationship between anxiety and depression found in our own data was due to the common element of general distress (cf. Clark & Watson) or to symptom overlap (cf. Alloy et al.); we did this by creating "pure" measures of anxiety and depression that controlled for these two factors. To create the "pure" measures of anxiety and depression, we drew on statements in the tripartite theory (Clark & Watson, 1991) and by Alloy et al. (1990) that described distinct features of anxiety and depression. Thus, the tripartite theory proposes that only anxious individuals experience symptoms of somatic arousal and only depressed individuals experience symptoms of anhedonia. And Alloy and colleagues (1990) propose that certain symptoms are distinct to anxiety (e.g., perceived danger and threat) and depression (e.g., hopelessness). Thus, to test whether anxiety and depression are aspects of a unitary disorder, we asked whether symptoms of somatic arousal are highly predictive of anhedonia, and whether symptoms that are distinct to one disorder (such as perceived danger and hopelessness) are highly predictive of symptoms that are distinct to the other disorder (e.g., hopelessness). We predicted, based on the unitary

hypothesis, that even when features of anxiety and depression that were distinct to the two disorders were measured, anxiety and depression would change together and be highly predictive of one another over the course of treatment.

Method

Participants

Inclusion criteria. Fifty-eight patients who received treatment at the San Francisco Bay Area Center for Cognitive Therapy provided data for this study. To select these patients, approximately 439 charts were screened; this was the complete set of closed cases treated by the first author (J. B. P.) and the therapists she supervised at the San Francisco Bay Area Center for Cognitive Therapy. Patients were selected for study if they met the following criteria: (1) symptoms of depression and anxiety had been monitored weekly using objective measures (patients were asked by their therapist to complete the measures if the patient suffered from clinically-significant symptoms that were the focus of treatment); (2) at least four sessions of data were available for measures of both anxiety and depression; (3) treatment was individual (i.e., not couple or group), and (4) the patient was aged 19 - 65 years. The most common reasons for excluding a case from study were that fewer than four measures of anxiety and depression were available, the patient sought treatment for problems other than depression or anxiety,

or the patient completed only anxiety or depression scales but not both. Two patients whose diagnoses differed markedly from those of the remainder of the sample (schizoaffective disorder and multiple personality disorder) were also excluded.

Patient characteristics. The 58 patients (35 female, 23 male) had a mean age of 36.4 years ($SD = 12.7$) and had completed an average of 14.3 years of education ($SD = 7.2$). Fifty-one were Caucasian, 2 were Asian, 2 were African American, 2 were Hispanic, and 1 was of mixed race. Twenty-eight were single (never married), 26 were married, 1 was separated, and 3 were divorced.

Psychiatric diagnoses were made at the beginning of treatment on the basis of a psychiatric interview by the clinician, who used the most current version of the DSM (American Psychiatric Association, 1987; 1994) available at the time the patient was treated. All patients received a primary diagnosis of a nonpsychotic mood disorder, an anxiety disorder, or both, and endorsed symptoms of anxiety and depression on self-report inventories (e.g., Beck Depression Inventory; Burns Anxiety Inventory). Forty patients had at least one mood disorder and at least one anxiety disorder, 10 patients had one or more mood disorders, and eight had one or more anxiety disorders. Of those who had mood disorders, 28 had major depressive disorder, 10 had dysthymia, 10 had major depressive

disorder and dysthymia, one had depressive disorder-not otherwise specified, and one had cyclothymia. Of those who had anxiety disorders, 14 had generalized anxiety disorder (GAD), 10 had social phobia, seven had panic disorder with agoraphobia, four had obsessive compulsive disorder (OCD), three had panic disorder without agoraphobia, one had post traumatic stress disorder (PTSD), two had GAD and social phobia, two had OCD and social phobia, one had OCD and panic with agoraphobia, one had OCD and panic without agoraphobia, one had PTSD and panic with agoraphobia, one had PTSD and panic without agoraphobia, and one had social phobia and panic with agoraphobia. Six patients had comorbid somatoform disorders and 22 had Axis II disorders.

Treatment

Patients were treated using cognitive-behavior therapy guided by an individualized case formulation (Persons, 1989; Persons, Davidson & Tompkins, 2001). Formulations were based primarily on Beck's cognitive theory. Interventions were drawn from evidence-based protocols, relying most heavily on Beck (Beck et al., 1979; Beck, Emery, & Greenberg, 1985; Beck, Freeman, & Associates, 1990), but also drawing on Foa and Rothbaum (1998); Heimberg and Becker (2001); Steketee (1993); and Linehan (1993). Typical interventions included self-monitoring, activity scheduling, conducting behavioral experiments, cognitive restructuring, contingency management,

social skills training, and exposure. Interventions were provided in the context of a structured therapy session and patients were expected to complete homework between sessions.

Treatment goals for all patients were to reduce symptoms of anxiety and depression. Other types of goals were also included, such as improving interpersonal relationships or completing a dissertation. To track progress, patients completed a Beck Depression Inventory (BDI) and a Burns Anxiety Inventory (Burns AI) in the waiting room before the therapy session.

Patients received an average of 18 sessions of treatment, ranging from 4 to 54 sessions. Forty-nine patients were treated by the first author, a female, Ph.D. level clinician with nearly 20 years of experience. Nine patients were treated by three therapists with 2 to 6 years of experience and who had been trained and were supervised by the first author as they provided the treatment reported here. Thirty-eight patients (66%) received adjunct pharmacotherapy, and 11 (34%) also received another psychosocial treatment, which typically consisted of couple therapy, group therapy, 12-step group treatment, or occasionally an insight-oriented individual psychotherapy.

Measures

Symptoms of depression. Symptoms of depression were assessed with the Beck Depression Inventory (BDI; Beck et al., 1979), a widely-used 21-item self-report measure that has been

shown to be a reliable and valid measure of depressive symptoms in psychiatric patients (Beck, Steer, & Garbin, 1988). BDI items are scored on a scale ranging from 0 to 3. In four cases, due to changes in assessment strategies at the Center for Cognitive Therapy, depression was assessed at some therapy sessions using the Burns Depression Checklist (Burns, 1998) or Burns Depression Checklist-Revised (Burns, 1998).

Symptoms of anxiety. Symptoms of anxiety were assessed with the Burns Anxiety Inventory (Burns AI), a 33-item self-report inventory measuring 6 anxious feelings (e.g., *anxiety*, *nervousness*, *worry or fear*), 11 anxious thoughts (e.g., *feeling that you're on the verge of losing control*) and 16 physical symptoms (e.g., *a lump in the throat*). Each symptom was rated on a 0 to 3 scale ranging from 0 (*not at all*) to 3 (*a lot*). Burns and Eidelson (1998) reported, in a sample of 483 outpatients, that the Burns AI had a Cronbach's alpha of 0.94, indicating high internal consistency, and it was correlated 0.86 ($p < .001$) with the Anxiety subscale of the Symptom Check List-90 (Derogatis, Rickels, & Rock, 1976) indicating high convergent validity. We chose to use the Burns Anxiety Inventory (Burns AI) because we found its classification of anxiety symptoms as feelings, thoughts, or physical symptoms to be clinically helpful, because it covered the full range of symptoms we observed in our patients, and because we found it to be

sensitive to change. Due to changes in assessment strategies at the Center for Cognitive Therapy, anxiety was measured in a few cases with a revised version of the Burns Anxiety Inventory (Burns, 1998) or with the Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988).

Measures of "pure" depression and anxiety. We created scores of "pure" depression and anxiety using two different methods, one based on Clark and Watson's (1991) tripartite theory, and one based on a list of symptoms that are common and unique to syndromes of depression and anxiety (Alloy et al., 1990). To create "pure" scores based on Clark and Watson's tripartite theory, we used symptom lists developed by Watson et al. (1995) to select items from the Burns Anxiety Inventory and from the Beck Depression Inventory that measured the elements viewed by tripartite theory as unique to anxiety or depression, respectively; we dubbed these scales *Pure Depression-I* and *Pure Anxiety-I*. Watson et al. identified symptoms specific to syndromes of anxiety and depression by using factor analyses to select items loading on factors their model viewed as specific to anxiety (items measuring somatic arousal) or depression (items measuring anhedonia). We selected from the BDI and Burns AI items that, in factor analyses conducted by Watson et al. (1995), loaded .30 or greater on the predicted factor and did not load .30 or greater on another factor.

We also created "pure" scores of depression and anxiety based on symptom descriptions of these syndromes. We relied on a chart made by Alloy et al. (1990, p. 507) that lists symptoms unique to syndromes of anxiety and depression. We used the Alloy et al. chart to select symptoms from the BDI and Burns AI that were unique to depression and anxiety, respectively, and we dubbed those measures *Pure Depression-II* and *Pure Anxiety-II*.

Table 1 lists the BDI and Burns AI items comprising both sets of pure scales. Inspection of the table indicates that the two sets of pure scores are, for the most part, made up of very different items.

In nine cases, symptoms of depression and anxiety were assessed in some sessions with measures other than the BDI and the Burns AI (i.e., the Burns Anxiety Inventory-Revised Version [Burns, 1998], the Burns Depression Checklist [Burns, 1998], the Burns Depression Checklist-Revised Version [Burns, 1998], or the Beck Anxiety Inventory [Beck, Epstein, Brown, & Steer, 1988]). In these cases, we created pure scales by selecting items that corresponded as closely as possible to the items on the pure scales.

Procedure

Data were recorded in the clinical record during patients' treatment and were culled from the record by the first author after treatment was completed. Upon beginning treatment,

patients had given written permission for their chart data to be used in a retrospective study that did not report any identifying information.

Results

Data Analytic Strategy

Symptom change during treatment. Before testing the hypotheses that anxiety and depression change together and predict one another during treatment, we used *t* tests to evaluate whether, on average, patients showed statistically significant symptom change during treatment. We compared total scores on the Burns AI and the BDI at the beginning of treatment to scores on the Burns AI and BDI, respectively, at the end of treatment.

Descriptive analyses. We conducted two descriptive analyses to address the question of whether anxiety and depression change in tandem. First, to test the hypothesis, predicted by the unitary view, that anxiety and depression measured at the same point in time would be more highly correlated than when they were measured at different points in time, we used data from all patients and all sessions and computed correlations between scores on the Burns AI and scores on the BDI when scales were completed in the same session and when they were completed one, two, or more (up to seven) sessions apart.

Second, because the unitary hypothesis predicts that any individual patient will show the same response pattern (improvement or failure to improve) for both sets of symptoms (i.e., depression and anxiety), we examined whether patients who showed sizeable improvement in symptoms of anxiety or depression also showed sizeable improvement in the other set of symptoms. To do this, we calculated the number of patients who improved by 50% or more on (a) both sets of symptoms, (b) neither set of symptoms, or (c) only one set of symptoms.

Mixed models analyses. In a formal statistical test of the hypothesis that anxiety and depression are strong predictors of one another over time, we modeled the relationship between anxiety and depression using mixed model methodology (Little1, Milliken, Stroup, & Wolfinger, 1996). Mixed effects models fit the usual kinds of regression parameters while simultaneously estimating error covariance parameters. The estimation uses restricted maximum likelihood methods. The mixed effects models method is an approach to repeated measures analysis that has several desirable properties. For example, the intercept is estimated separately for each subject and the methodology does not require complete data from each subject. Thus, this method accommodates the fact that patients contributed varying numbers of nonindependent data points (i.e., depending on the number of therapy sessions they completed) at varying time lags (e.g.,

when patients failed to attend a weekly therapy session or failed to complete measures prior to a session).

Analyses were conducted in two ways: (a) with depression as the dependent variable and anxiety and session as independent variables; and (b) with anxiety as the dependent variable and depression and session as independent variables. The session variable was included to test whether symptoms of anxiety and depression decrease over time, as would be expected. We conducted the analyses three times, using the full-scale measures of anxiety and depression (i.e., total scores on the Burns AI and BDI) and using both sets of pure scores of anxiety and depression.

Symptom Change during Treatment

On average, patients showed statistically significant improvement in symptoms of depression (as measured by the BDI) and anxiety (as measured by the Burns AI) over the course of treatment¹. On the BDI, patients changed from a mean score at pre-treatment of 21.6 ($SD = 7.5$) to a mean score at post-treatment of 11.6 ($SD = 8.6$), $t(57) = 9.27$, $p < 0.001$. On the Burns AI, patients changed from a mean score at pre-treatment of 38.1 ($SD = 17.8$) to a mean score at post-treatment of 20.7 ($SD = 16.9$), $t(55) = 7.22$, $p < 0.001$.²

Descriptive Analyses

Correlational plots. Visual displays of the correlations between depression and anxiety as a function of the number of sessions lagged between the measurement of anxiety and depression are plotted in Figure 1. The plots show correlations for depression and anxiety when anxiety and depression were measured in the same session and when they were measured one, two, or more (up to seven) sessions apart. Plots are presented for the full scale scores on the BDI and the Burns AI, as well as for measures of pure depression and pure anxiety. The X-axis in Figure 1 represents the number of sessions lagged between the time the anxiety and depression scales were collected; thus, the point *AD4* represents the correlation of anxiety at one point in time and depression measured four sessions later, and the point *DA4* represents the correlation of depression at one point in time and anxiety measured four sessions later.

The curves have the shape predicted by the unitary hypothesis: correlations are highest when measures are collected at the same time point and decrease as the time lag between sessions increases. Also as predicted, the curves for the full scale scores and the pure scores have the same shape, but the correlations for the full scale scores are higher than for the pure scores. When anxiety and depression are measured at the same time (i.e., during the same session), the correlation coefficient for the full scale scores is 0.70, the correlation

coefficient for the pure scales based on tripartite theory is 0.40, and the correlation coefficient for the pure scores based on symptom descriptions (i.e., overlapping versus non-overlapping symptoms) is 0.50.

Changes in individual patients. Eighteen of 57 patients (31.6%) showed improvement of at least 50% or greater in symptoms of both anxiety and depression; 19 patients (33.3%) showed improvement on neither set of symptoms; and 20 patients (35.1%) showed improvement on only one set of symptoms. Thus, as predicted by the unitary hypothesis, most patients (64.9%, the sum of 31.6% and 33.3%) showed reductions in symptoms of *both* or *neither* anxiety and depression, but not just one or the other.

Mixed Models Analyses

Results of mixed-models analyses are presented in Table 2. These results indicate that, as predicted by the unitary hypothesis, anxiety and depression were statistically significant predictors of one another during treatment ($p < 0.003$). This was the case both when anxiety predicted depression and when depression predicted anxiety, and it was true for all three scales measuring anxiety and depression (i.e., full scale scores and both sets of pure scores). In all analyses, the relationship between anxiety and depression was both statistically significant and substantial in size. In addition, consistent with the t tests presented above, session was a

statistically significant predictor of depression and anxiety, indicating that scores on depression and anxiety decreased over the course of treatment.

Summary of Results

Symptoms of anxiety and depression showed statistically significant reductions during the course of treatment. Descriptive analyses showed that, as predicted by the unitary hypothesis, anxiety and depression were more tightly related when they were measured closer in time than when measured farther apart in time and that most patients improved on either both sets of symptoms or neither set (but not on just one set of symptoms). Mixed models analyses showed that, as predicted by the unitary hypothesis, anxiety and depression were strong predictors of one another, even when pure scores were computed to control for the common factor of general distress and for the overlap of symptoms common to depression and anxiety.

Discussion

This study examined changes in symptoms of depression and anxiety over the course of treatment in patients who were treated naturalistically in private practice with cognitive-behavior therapy. Our findings were more supportive of a unitary than a discrete view of anxiety and depression.

Mixed models analyses showed that anxiety and depression were powerful predictors of one another. This was true even when

the analyses were carried out using pure scores of anxiety and depression, which assessed symptoms that were presumed to be unique to anxiety and depression. In fact, we created two sets of pure scores comprised of fairly different items: one set measured symptoms of somatic anxiety and anhedonia, which were presumed by Clark and Watson to be unique to anxiety and depression respectively, and one set measured symptoms that were presumed by Alloy et al. (1990) to be unique to anxiety and depressive syndromes. The finding that our pure scores of anxiety and depression were strong predictors of one another, even though these scales were created in two different ways and were comprised of different items, suggests that the tight relationships we found between anxiety and depression are not completely accounted for by the construct of general distress (Watson et al., 1995) or by the presence of overlapping symptoms in syndrome descriptions of anxiety and depression (Alloy et al., 1990), but have other sources as well. These other sources might include the proposal of Alloy et al. that anxious and depressed individuals both feel hopeless about the inability to control important outcomes, Beck's (1976) proposal that both anxious and depressed individuals have pathological schemas that cause symptoms when they are activated by stressful life events, and/or biological factors.

The unitary view of depression and anxiety contrasts with the discrete view represented by the diagnostic nomenclature and by current evidence-based psychosocial treatments, which view anxiety and depression as distinct disorders (cf. Beck, Rush, Shaw, & Emery, 1979; Beck, Emery, & Greenberg, 1985; Craske, Barlow, & Meadows, 2000; Foa & Rothbaum, 1998; Heimberg & Becker, 2001). Certainly the discrete view has led to remarkable progress in psychosocial treatment of anxiety and mood disorders. Nevertheless, the view of anxiety and mood disorders as discrete is not consistent with the findings presented here or with those of other investigators (see LaBerge et al., 1993; Moras et al., 1993; Maser & Cloninger, 1990; Kendall & Watson, 1989).

Moreover, the discrete approach to depression and anxiety presents several types of difficulties for the clinician. First, because anxiety and mood disorders commonly co-occur, the clinician attempting to deliver empirically-supported treatment to an anxious depressed patient must read two or more protocols in order to treat that patient. Second, because most of the protocols are based on the same (cognitive-behavioral) model, they share many theoretical, procedural, and intervention components. (The unitary view suggests that this is not an accident.) Thus, the clinician who takes the time to read multiple protocols finds that their content overlaps

extensively. Third, because the protocols target single disorders, they do not provide any assistance to the clinician in his/her efforts to understand the relationships *among* a patient's various disorders in order to select an efficient intervention strategy (Rachman, 1991).

These observations, taken together with data supporting the unitary view of anxiety and depression, have several implications. One is that it may be time to move the Mixed Anxiety-depressive Disorder that is included in the DSM-IV as a "criteria set provided for further study" to the main body of the next version of the DSM. It is certainly time to develop a single protocol for treating the depressed anxious patient; David Barlow (2002) reported that he is writing one. In addition, clinicians need assistance applying empirically-supported protocols that target single disorders to the treatment of multiple-disorder patients; this problem arises in the treatment of anxious depressed patients, but also is a more general problem. Persons (2002) described a way of doing this that calls for the clinician to use empirically-supported nomothetic theories and treatment protocols as templates for an individualized case formulation and treatment plan. Finally, a focus on symptoms (cf. Persons, 1986) can help clinicians maintain a more unitary view of their patients' problems than that provided by the current psychiatric nomenclature.

Several limitations of the present study must be acknowledged. Anxiety and depression were measured using only self-report scales, and psychiatric diagnoses were assigned by the treating clinician based on a clinical interview. Treatment was naturalistic, and patients were free to seek out whatever type of adjunct treatment they wanted, including pharmacotherapy. The study focused only on patients who had both anxiety and depressive symptoms; therefore, it is unknown how results are affected by the fact that we excluded patients who had only one set of symptoms.

Finally, it is important to acknowledge that the finding that anxiety and depression are strong predictors of one another is not conclusive evidence that they are aspects of a single unitary disorder. In fact, our findings, represented visually in the descriptive analysis represented in Figure 1, show that although anxiety and depression are highly correlated, their correlation is not 1. Thus, the unitary-discrete distinction is probably best viewed as a continuum rather than as a dichotomy, and our findings are best interpreted as indicating that anxiety and depression are likely to occupy a position on the unitary-discrete continuum that is closer to the unitary point on the continuum than the more discrete point represented by the current diagnostic nomenclature and the available evidence-based protocols.

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Footnotes

¹Outcome of naturalistic cognitive-behavior therapy for depression for 20 of the patients studied here was reported in Persons, Bostrom, & Bertagnolli (1999).

²The sample size for this analysis was 56 because two subjects were missing Burns AI data at either the pre- or post-treatment assessment point.

Table 1

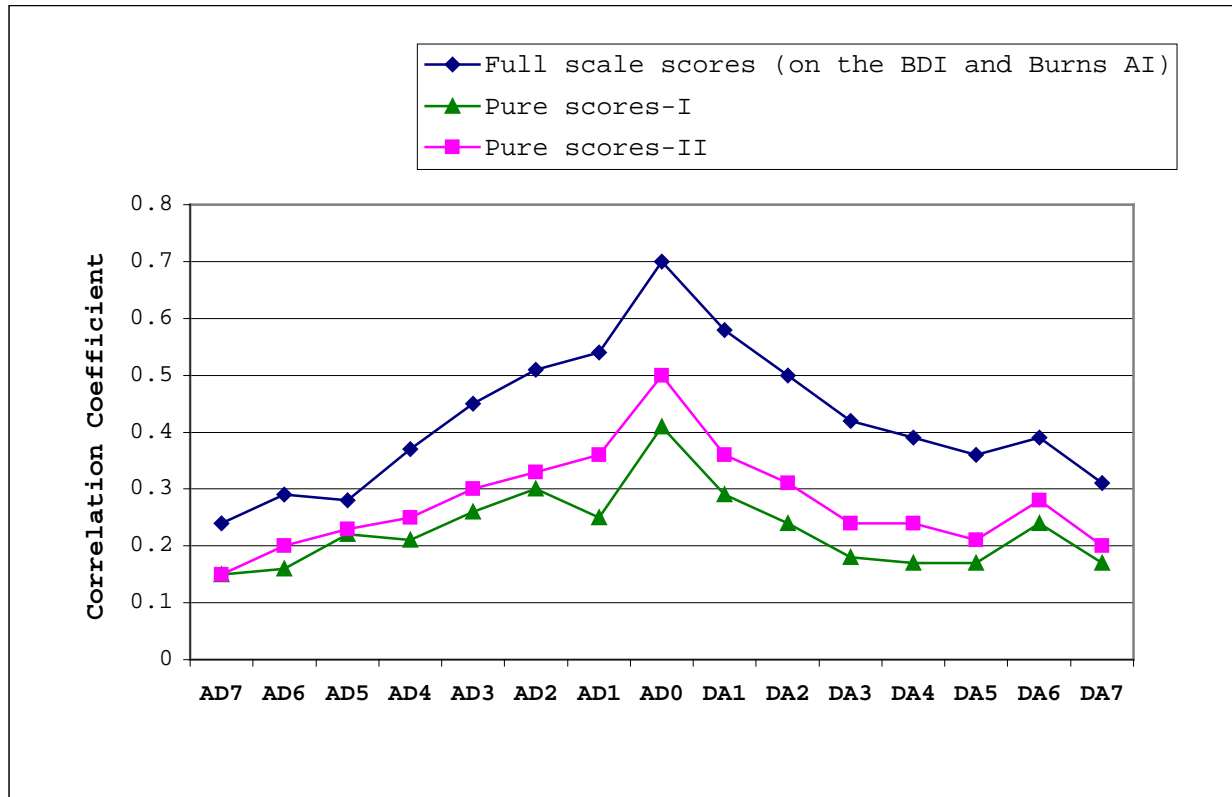
*Anxiety and Depression Items Comprising the "Pure"-Tripartite
and "Pure"-Symptom Scales*

Table 2

Mixed Model Analyses of Anxiety and Depression

Figure 1

Visual Display of Correlations of Measures of Depression and Anxiety as a Function of Number of Sessions between Measures



Note. The X-axis represents the number of sessions between the time the anxiety and depression scores were collected; thus, the point "AD0" represents the correlation of anxiety and depression when they were measured in the same session, "AD1" represents the correlation of anxiety at one session and depression measured one session later, "DA1" represents the correlation of depression at one session and anxiety measured one session later, and so on. BDI = Beck Depression Inventory; Burns AI = Burns Anxiety Inventory. *Pure scores-I* = "pure" scores of

depression and anxiety that were created by selecting items from the BDI and the Burns AI that measure symptoms viewed by tripartite theory as unique to depression and anxiety respectively. *Pure scores-II* = "pure" scores of depression and anxiety that were created by selecting items from the BDI and the Burns AI that are unique to syndromes of depression and anxiety respectively.