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Testing a Tripartite Model: I. Evaluating the Convergent and Discriminant Validity of Anxiety and Depression Symptom Scales

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L. A. Clark and D. Watson (1991) proposed a tripartite model that groups symptoms of depression and anxiety into 3 subtypes: symptoms of general distress that are largely nonspecific, manifestations of somatic tension and arousal that are relatively unique to anxiety, and symptoms of anhedonia and low Positive Affect that are specific to depression. This model was tested in 5 samples (3 student, 1 adult, and 1 patient sample) using the Mood and Anxiety Symptom Questionnaire (MASQ; D. Watson & L. A. Clark, 1991), which was designed to assess the hypothesized symptom groups, together with other symptom and cognition measures. Consistent with the tripartite model, the MASQ Anxious Arousal and Anhedonic Depression scales both differentiated anxiety and depression well and also showed excellent convergent validity. Thus, differentiation of these constructs can be improved by focusing on symptoms that are relatively unique to each.

Phenomenologically, anxiety and depression are clearly distinct from one another. Anxiety is centered on the emotion of fear and involves feelings of worry, apprehension, and dread; in contrast, depression is dominated by the emotion of sadness and is associated with feelings of sorrow, hopelessness, and gloom (Izard, 1972; Watson & Kendall, 1989). Nevertheless, despite their seeming distinctiveness, it has proven difficult to distinguish these constructs empirically (Clark & Watson, 1991; Kendall & Watson, 1989; Maser & Cloninger, 1990).

Many studies have shown that self-report measures of anxiety and depression are highly correlated, with coefficients typically in the .45 to .75 range (Clark & Watson, 1991). This finding is robust across normal individuals of differing ages, including college students (e.g., Gotlib, 1984; Tanaka-Matsumi & Kameoka, 1986; Watson & Clark, 1992), children (Blumberg & Izard, 1986; Wolfe et al., 1987), and community-dwelling adults (Costa & McCrae, 1992; Orme, Reis, & Herz, 1986). In their comprehensive review of the literature, Clark and Watson (1991) noted that somewhat better differentiation was obtained in psychiatric patient samples; however, they concluded that even in patient samples "self-ratings of anxiety and depression typically provide more information about the overall level of subjective distress than about the relative salience of depressive versus anxious symptomatology" (p. 326).

To some extent, these correlations reflect psychometric and taxonomic problems with existing scales and constructs. For example, Gotlib and Cane (1989) noted that several symptoms (e.g., insomnia, fatigue, irritability, restlessness, difficulty concentrating) are found in the criteria for both generalized anxiety disorder and major depression. Not surprisingly, these overlapping symptoms frequently appear in scales assessing both depression and anxiety, thereby inflating the correlation between them. Furthermore, many scales contain symptom content that is actually more appropriate to the other construct. For instance, the trait form of the State–Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) assesses feelings of failure, disappointment, and unhappiness that are more characteristic of depression than anxiety; conversely, the Center for Epidemiological Studies Depression Scale (Radloff, 1977) assesses feelings of fearfulness that are more relevant to anxiety than depression.

It must be emphasized, however, that these conceptual and psychometric problems cannot account entirely for the strong and pervasive association between depression and anxiety scales; in fact, measures of these constructs remain substantially intercorrelated even after such problems have been eliminated (Clark & Watson, 1991). Furthermore, it is important to note that this association is not confined to self-report data. Considerable overlap is also found in clinicians' ratings of anxiety and depression, although the level of differentiation in these data appears to be somewhat greater than in self-ratings (Clark & Watson, 1991). Moreover, substantial comorbidity has been observed at the diagnostic level as well (Breier, Charney, & Heninger, 1985; Clark, 1989; Maser & Cloninger, 1990). For instance, Clark's (1989) review indicated that across several

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studies, approximately two-thirds of patients with panic disorder, agoraphobia, or both, also met lifetime criteria for major depression.

Understanding the Relation Between Depression and Anxiety

Two-Factor Affective Model

Why are anxiety and depression so strongly related in both self-report and clinical data? On the basis of seminal work by Tellegen (1985; Watson & Tellegen, 1985), we originally developed a model that emphasized the role of basic dimensions of affect (see Watson, Clark, & Carey, 1988; Watson & Kendall, 1989). Extensive research has demonstrated that self-rated mood is characterized by two broad factors: Negative Affect and Positive Affect (e.g., Mayer & Gaschke, 1988; Meyer & Shack, 1989; Tellegen, 1985; Watson, 1988b; Watson & Tellegen, 1985). Negative Affect represents the extent to which a person is feeling upset or unpleasantly aroused; it is a general factor of subjective distress and encompasses a broad range of negative mood states, including fear, sadness, anger, guilt, scorn, and disgust. In contrast, the general Positive Affect factor subsumes a broad range of positive mood states, including feelings of joy, energy, enthusiasm, interest, alertness, and self-confidence.

These two mood dimensions are largely independent of one another and have distinctive patterns of relations with other variables (e.g., Bradburn, 1969; Clark & Watson, 1988; Watson, 1988a; Watson & Pennebaker, 1989). Of particular relevance to this article, Watson and Tellegen (1985) presented evidence indicating that these two mood factors show an interesting differential pattern in relation to depression and anxiety. Specifically, because anxiety and depression are each centered around negative mood states, measures of both constructs tend to be strong markers of the general Negative Affect factor. In contrast, they show very different associations with Positive Affect: Measures of Positive Affect are consistently (negatively) correlated with depressed mood and symptomatology but are largely unrelated to anxious mood and symptomatology (see also Tellegen, 1985).

This differential pattern has been replicated in a number of studies (e.g., Watson et al., 1988; Watson & Kendall, 1989). For example, Watson et al. (1988) found that a trait Negative Affect measure correlated significantly with most symptoms of both anxiety and depression, whereas trait Positive Affect related much more strongly and consistently to the depressive than to the anxious symptoms. Similarly, Negative Affect was associated with the presence of both anxiety and depressive disorders, whereas Positive Affect correlated consistently only with the latter. These findings suggest that the absence of pleasurable experience (i.e., anhedonia) is especially important in depression, and that low Positive Affect may be a critical factor in distinguishing it from anxiety.

Tripartite Model

This affect-based model thus posits both a specific and a nonspecific factor. That is, Negative Affect is a nonspecific factor that is common to both depression and anxiety; the influence of this common factor helps to explain the strong association between measures of these constructs. In contrast, (low) Positive Affect is a specific factor that is relatively unique to depression.

Clark and Watson (1991) extended this model by proposing a second specific factor that is relatively unique to anxiety. After reviewing a wide range of evidence from both patient and nonpatient samples, they concluded that symptoms of physiological hyperarousal are more strongly characteristic of anxiety than depression. For instance, symptoms of somatic tension and arousal tend to be the strongest markers of specific anxiety factors that have emerged in factor-analytic studies. Furthermore, somatic symptoms have proven to be particularly good differentiators in comparisons of anxious versus depressed patients. Finally, content analyses indicated that anxiety scales with the best discriminant validity tended to assess somatic symptoms of anxiety rather than anxious mood per se.

Putting all of this evidence together, Clark and Watson (1991) proposed that a "tripartite model" best captures the existing data. In this model, symptoms of anxiety and depression are grouped into three basic subtypes. First, many relevant symptoms are strong markers of the general distress or Negative Affect factor. These symptoms are relatively nonspecific—that is, they are commonly experienced by both anxious and depressed individuals. This nonspecific group includes both anxious and depressed mood, as well as other symptoms that are prevalent in both types of disorder, such as insomnia, restlessness, irritability, and poor concentration. In addition to these nonspecific symptoms, however, each construct is characterized further by a cluster of relatively unique symptoms: Somatic tension and hyperarousal are relatively specific to anxiety, whereas anhedonia and the absence of Positive Affect are relatively specific to depression.

Current Study

This tripartite model has important implications for the assessment of these constructs. A key prediction of this model is that anxiety and depression can be differentiated better by deemphasizing the largely nonspecific symptoms and by focusing more sharply on the two specific clusters. In other words, scales that measure somatic arousal and anhedonia/low Positive Affect should show significantly better discriminant validity than measures that primarily assess largely nonspecific symptoms such as anxious and depressed mood.

A basic goal of this study is to test this key prediction of the tripartite model. To do so, we used the Mood and Anxiety Symptom Questionnaire (MASQ; Watson & Clark, 1991), an instrument containing a range of symptoms relevant to depression and anxiety. Using the tripartite model as a conceptual guide, Watson and Clark (1991) constructed two sets of anxiety and depression scales intended to show substantially different levels of discriminant validity. On the one hand, General Distress: Anxious Symptoms (GD: Anxiety) and General Distress: Depressive Symptoms (GD: Depression) assess anxious and depressed mood, respectively, as well as other symptoms that were found by Clark and Watson (1991) to be relatively nonspecific. Accordingly, these scales were expected to be highly interrelated and to have relatively poor discriminant validity. In contrast, the other two scales—Anxious Arousal and Anhedonic Depres-

sion—were designed to measure somatic hyperarousal and anhedonia/low Positive Affect, respectively. The tripartite model would predict that these scales would be more weakly related and thus would show much better discriminant validity. This study tests these predictions in five samples (three samples of college students, one adult sample, and one sample of psychiatric patients).

Clearly, however, discriminant validity is a necessary but not sufficient condition for establishing the construct validity of a measure. In addition, one must demonstrate convergent validity, that is, substantial relations with other purported measures of the target construct. Only in this complete convergent and discriminant context can one determine how well a scale assesses a target construct. We explore the issue of convergent validity initially by analyzing correlations between the corresponding MASQ specific and nonspecific scales (i.e., Anxious Arousal's convergence with GD: Anxiety, and Anhedonic Depression's association with GD: Depression) in all five samples. We then examine this issue more thoroughly by analyzing the MASQ scales together with other anxiety and depression scale pairs in two of the samples. Finally, in a single sample, we examine several of these symptom scale pairs in relation to measures of anxious and depressive cognitions.

We emphasize that the primary goals of this study are theoretical, not psychometric. That is, we are not primarily interested in exploring the psychometric properties of the MASQ; rather, our purpose is to use this instrument to explicate the concepts of depression and anxiety by identifying the symptoms that are most clearly and uniquely characteristic of each construct. In other words, following the logic originally articulated by Loevinger (1957), we are using the MASQ scales as instruments of psychological theory.

Method

Participants and Procedures

Data were obtained from three samples of undergraduates enrolled in various psychology courses at Southern Methodist University. All students participated in return for extra course credit. The first sample ("Student 1") consisted of 516 students who were tested in September, 1990. This group included 208 men and 304 women (gender was unknown for 4 participants). The second sample ("Student 2") consisted of 381 students (143 men, 234 women, and 4 unknown) who were assessed during November and December, 1990. It should be noted that the large majority of the Student 2 participants (86%) were also included in the Student 1 assessment. Thus, the Student 2 participants essentially represent a retest of the Student 1 sample. Finally, a third group of 522 students ("Student 3") was assessed at one of several points between March and September, 1991. This sample included 206 men and 316 women. Six students, however, had incomplete symptom or cognition data; hence, $n = 516$ for all analyses reported in this article.

The normal adult sample consisted of 329 participants (142 men and 187 women) with a mean age of 40.0 years ($SD = 11.7$). Most of the participants (258, or 78%) were employees of various businesses in the Dallas–Fort Worth metropolitan area. The remaining participants were visitors to a Dallas area hospital ($n = 29$) and members of local social and church groups ($n = 42$). All participants responded anonymously and participated voluntarily (i.e., without compensation). Complete scale data were available on 328 participants, who comprise the sample that was used in all analyses.

Finally, the patient sample consisted of 470 participants (453 men, 5 women, and 12 unknown) who were consecutive admissions to the assessment unit of a comprehensive substance abuse treatment program at the Cleveland Department of Veterans Affairs Medical Center. Their mean age was 39.3 years ($SD = 8.9$). Most of these participants (72%) were unemployed at the time of assessment.

Virtually all of the patients ($n = 455$, or 97%) were administered the Substance Use Disorders Diagnostic Schedule (SUDDS; Harrison & Hoffman, 1985), a structured clinical interview that assesses substance abuse and dependence disorders. The interview was administered by technicians who were trained to criteria by experienced clinical psychologists. On the basis of their SUDDS responses, 438 of the interviewed patients (96%) met lifetime criteria for at least one substance abuse or dependence disorder. In addition, these same patients completed the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987), which is widely used to assess gambling problems. Using a SOGS score of 5 or greater as a cutoff (Lesieur & Blume, 1987), 57 of the assessed patients (13%) could be classified as pathological gamblers.

Measures

Mood and Anxiety Symptom Questionnaire. All five samples completed the MASQ, which was constructed explicitly to test Clark and Watson's (1991) tripartite model. Its 90 items were culled from the symptom criteria for the anxiety (primarily generalized anxiety disorder and panic disorder, but also posttraumatic stress disorder) and mood (primarily major depression and dysthymia, but also bipolar disorder and cyclothymia) disorders. Participants indicated to what extent they had experienced each symptom (1 = *not at all*, 5 = *extremely*) "during the past week, including today."

Using the tripartite model as a conceptual guide, Watson and Clark (1991) initially grouped the MASQ items into six scales on the basis of their content. Reliability and factor analyses subsequently produced minor refinements. Three of the scales contain symptoms that—according to the tripartite model—should be strong markers of the general distress factor and, therefore, relatively nonspecific to depression or anxiety. Accordingly, scores on these three scales should be strongly interrelated.

The symptom criteria of the revised third edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM–III–R;* American Psychiatric Association, 1987) guided the placement of these general distress symptoms into the three scales; that is, the items were subdivided on the basis of whether they are currently included in the *DSM–III–R* symptom criteria of (a) one or more anxiety disorders, (b) one or more of the mood disorders, or (c) both types of disorder. Thus, the General Distress: Mixed Symptoms scale (GD: Mixed) contains 15 items that appear in the symptom criteria of both the anxiety and mood disorders (e.g., feelings of irritability and confusion; insomnia; difficulty concentrating). Conversely, the General Distress: Anxious Symptoms scale (GD: Anxiety; 11 items) includes several indicators of anxious mood, as well as other symptoms of anxiety disorder that were expected to be relatively nondifferentiating (e.g., inability to relax, diarrhea, upset stomach). Finally, the General Distress: Depressive Symptoms scale (GD: Depression; 12 items) contains several items reflecting depressed mood along with other relatively nonspecific symptoms of mood disorder (e.g., feelings of disappointment and failure, self-blame, pessimism).

The three remaining MASQ scales contain symptoms that were hypothesized to be relatively specific to either anxiety or depression. First, Anxious Arousal (17 items) includes symptoms of somatic tension and hyperarousal (e.g., feeling dizzy or lightheaded, shortness of breath, dry mouth, frequent urination, shaking hands). This scale originally contained 19 items. However, a preliminary factor analysis in the Student 1 sample indicated that two of the items ("was afraid I was going to lose control"; "felt like I was going crazy") actually loaded more strongly on

the general distress factor than on the specific anxiety factor. Consequently, these items were eliminated.

The final two scales both contained items that were expected to be relatively specific to depression; initially, they were assessed separately in order to examine empirically whether they should be combined into a single scale. Loss of Interest originally contained nine items that reflect anhedonia, disinterest, and low energy (e.g., felt bored, slowed down; felt that nothing was interesting or enjoyable; felt withdrawn from other people; thought about death or suicide). A reliability analysis in the Student 1 sample indicated that one item ("felt like being by myself") was so uncorrelated with the others that deleting it raised the scale's coefficient alpha (from .73 to .78). Accordingly, this item was dropped.

The other scale—High Positive Affect—included 24 items that directly assessed positive emotional experiences (e.g., felt cheerful, optimistic, "up"; had a lot of energy; looked forward to things with enjoyment; felt good about self). These items were included in the MASQ on the basis of previous research indicating that it is desirable to assess high Positive Affect directly (as opposed to measuring only anhedonia or low Positive Affect) because these high-end items tend to be stronger, purer markers of the underlying factor (see Watson et al., 1988; Watson & Kendall, 1989).

As noted earlier, the Loss of Interest and High Positive Affect items both were expected to be relatively specific to depression. Furthermore, across the five samples, High Positive Affect was substantially negatively correlated with both of the depression scales (weighted mean $rs = -.53$ with Loss of Interest and $-.55$ with GD: Depression) and had significantly weaker associations with the other three MASQ scales (weighted mean $rs = -.41$ with GD: Mixed, $-.28$ with GD: Anxiety, and $-.18$ with Anxious Arousal). Therefore, Watson and Clark (1991) created a new 22-item scale—Anhedonic Depression—that contained the 8 Loss of Interest items together with 14 of the (reverse-keyed) High Positive Affect items. This Anhedonic Depression scale is used as the specific depression measure in subsequent analyses.[1]

Other symptom scales. The adult and Student 3 samples also completed other anxiety and depression symptom scale pairs. All of these scales were completed using the same time instructions, in which participants described their feelings and experiences "during the past week, including today."

First, both samples completed the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979), the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988), and the Anxiety and Depression scales from the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971). The BDI consists of 21 items that assess the severity of depressive symptoms; from a set of four statements, participants chose the one that best described their recent feelings and experiences. The BAI contains 21 affective and somatic symptoms of anxiety that are rated on a 4-point scale of experienced severity (0 = *not at all,* 3 = *severely/I could barely stand it*).

In contrast, the POMS scales are pure mood measures that more narrowly assess the core affects of the two constructs. Participants rate the extent to which they have experienced each mood state on a 5-point scale (0 = *not at all,* 4 = *extremely*). The Anxiety scale contains nine items (e.g., anxious, nervous, tense, uneasy), whereas the Depression scale consists of 15 items (e.g., sad, gloomy, miserable, lonely, helpless, worthless).

In addition, the Student 3 sample completed two other symptom scale pairs. First, they were assessed on the Anxiety and Depression scales from the Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). The HSCL Depression scale consists of 11 items that reflect sad affect and other symptoms of depression, whereas the HSCL Anxiety scale contains 7 items that assess anxious mood and related symptoms. Participants rated on a 5-point scale (1 = *not at all,* 5 = *extremely*) the extent to which they had been bothered or distressed by each symptom. Second, they completed the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). The 7-item Anxiety scale primarily assesses affective and cognitive symptoms of anxiety, whereas the 7-item Depression scale focuses on positive emotional experiences (e.g., "I feel cheerful"; "I still enjoy the things I used to enjoy"). From a set of four response alternatives, participants chose the one that best described how frequently they experienced each symptom.

Cognition scales. Finally, the Student 3 participants completed three measures of anxious and depressive cognitions. First, they were assessed on the Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974), a 20-item true–false instrument that measures general attitudes of negativity and pessimism about the future. Beck, Riskind, Brown, and Steer (1988) reported evidence indicating that BHS scores are relatively specific to depression. In addition, participants completed the 26-item Cognitions Checklist (CCL; Beck, Brown, Steer, Eidelson, & Riskind, 1987). Twelve CCL items measure depressive cognitions (CCL-D), and 14 items measure thoughts related to anxiety (CCL-A). On a 5-point scale (0 = *rarely,* 4 = *always*), participants rated how frequently they experienced these thoughts in various situations. The CCL scales show promising specificity in differentiating depression from anxiety (see Beck et al., 1987).

Results

MASQ Analyses

Comparison of symptom levels across groups. Before considering the correlational results that are central to the tripartite model, it is instructive to examine the mean symptom levels that were reported by students, adults, and patients. However, these analyses are complicated by substantial differences in the gender composition of the groups; that is, the patient sample was overwhelmingly male, whereas the student and adult samples were more evenly divided between men and women. Therefore, to control for possible gender effects, we analyzed the student and adult data separately for men and women.

We first pooled the data from the three college student samples, eliminating retest observations from those participants who had been assessed twice and deleting those whose gender was unknown. This yielded overall student groups of 438 men and 635 women. The data from these two student samples were then compared to the responses of the male (n = 142) and female (n = 186) adults and the male psychiatric patients (n = 453).

Descriptive statistics for the five MASQ scales in each of these groups are reported in Table 1. To test for differences in symp-

[1] On the basis of these data alone, one might argue that the High Positive Affect items should have been added to GD: Depression instead of—or in addition to—Loss of Interest. Note, however, that the tripartite model predicts that the latter scale should contain symptoms that are more specific to depression. Thus, the creation of the Anhedonic Depression scale was guided jointly by theoretical and empirical considerations. We also should note that the 14 reverse-keyed items that were included in the Anhedonic Depression scale were the strongest, clearest markers of the general factor that emerged in a combined analysis of the High Positive Affect/Loss of Interest items in the Student 1 sample. Most of the other High Positive Affect items were also strong markers of this factor; however, we felt that the inclusion of any more reverse-keyed items might yield a scale that simply or primarily assessed (low) Positive Affect, rather than depressive symptomatology per se.

Table 1
Descriptive Statistics for the MASQ Scales in Five Subject Groups

MASQ scale	Students		Adults		
	Male (n = 438)	Female (n = 635)	Male (n = 142)	Female (n = 186)	Patients (male; n = 453)
GD: Mixed					
M	34.5_a	35.2_a	31.3_b	$33.0_{a,b}$	34.9_a
SD	9.0	9.2	10.0	10.2	12.3
GD: Anxiety					
M	$22.3_{a,b}$	22.6_a	20.5_b	$20.8_{a,b}$	$21.6_{a,b}$
SD	6.4	6.3	7.5	6.7	7.5
Anxious Arousal					
M	27.8_a	27.1_a	24.4_b	24.2_b	28.3_a
SD	9.4	8.2	8.0	7.8	10.4
GD: Depression					
M	$24.5_{b,c}$	25.8_b	22.1_c	$25.0_{b,c}$	28.0_a
SD	8.7	8.8	8.1	9.4	10.0
Anhedonic Depression					
M	55.6_b	54.2_b	52.0_b	55.2_b	65.5_a
SD	13.4	13.9	12.5	15.2	14.8

Note. Within a row, means not sharing a subscript are significantly different from one another ($p < .05$, two-tailed). MASQ = Mood and Anxiety Symptom Questionnaire; GD = General Distress.

tom levels across the groups, we conducted one-way analyses of variance on each of the MASQ scales. All five analyses revealed significant group differences (F values ranged from 4.81 to 54.14; all $ps < .001$). Post hoc comparisons using Scheffé's test (see Table 1) indicated that the patients scored significantly higher on Anhedonic Depression and GD: Depression than either the students or adults; the only significant difference among the latter groups was that the female students scored higher on GD: Depression than did the adult men. On Anxious Arousal, the patients and students both had higher scores than the adults but did not differ from each other. Similarly, the patients and students scored higher on GD: Mixed than the adult men, but not the adult women. Finally, the only significant difference on GD: Anxiety was that female students had higher scores than the male adults.

To summarize, the Table 1 data yielded two basic findings. First, the patients reported higher levels of depressive symptoms than either the students or the adults. Second, the adults—especially the male adults—reported somewhat lower symptom levels than did the other groups.

Correlational analyses. Correlations among the MASQ scales in each sample are reported in Table 2. Although individual coefficients vary somewhat, the overall correlational pattern was extremely consistent across samples. Several aspects of these data are noteworthy. First, as was discussed earlier, the GD: Mixed scale contains items that are found in the symptom criteria of both the mood and anxiety disorders. Accordingly, one would expect this scale to be strongly associated with both depression and anxiety. The Table 2 data strongly confirm this expectation. The scale's relations with the other two General Distress scales were especially strong: Across the five samples, GD: Mixed had correlations ranging from .71 to .86 (weighted M = .78) with GD: Anxiety, and from .73 to .80 (M = .76) with GD: Depression. Its correlations with the specific scales were lower but still substantial: They ranged from .58 to .75 (M = .66) with Anxious Arousal, and from .54 to .69 (M = .59) with Anhedonic Depression.

Second, Clark and Watson's (1991) tripartite model predicts that compared to their GD counterparts, the specific scales should be more weakly related and show much better discriminant validity. Table 2 indicates that this prediction also was strongly confirmed. Across the five samples, the correlations between GD: Anxiety and GD: Depression ranged from .61 to .78 (M = .69); these values indicate that these scales shared from 37% to 61% (M = 48%) of their variance. In sharp contrast, the correlations between Anxious Arousal and Anhedonic Depression ranged from only .25 to .49 (M = .34), reflecting only 6% to 24% (M = 12%) shared variance. Note, moreover, that both of the specific scales contributed significantly to this improved differentiation. That is, in every sample, GD: Anxiety had a significantly lower correlation with Anhedonic Depression than with GD: Depression, and GD: Depression had a significantly lower correlation with Anxious Arousal than with GD: Anxiety; furthermore, in four of the five samples, the correlation between Anhedonic Depression and Anxious Arousal was significantly lower than any other.

Third, the MASQ specific scales also converged well with their GD counterparts. Across the five samples, Anxious Arousal correlated from .68 to .78 (M = .72) with GD: Anxiety; similarly, Anhedonic Depression correlated from .68 to .72 (M = .70) with GD: Depression. Thus, the superior discriminant validity of the specific scales was achieved without seriously compromising convergent validity.

Further Analyses of the Adult Sample

Correlational analyses. Recall that the adults completed four pairs of symptom scales: the two sets of MASQ scales, the Beck Depression and Anxiety Inventories, and the POMS Anx-

Table 2
Correlations Among the MASQ Scales in Five Samples

Scale	1	2	3	4	5
Student 1 sample (N = 516)					
1. GD: Mixed	(.84)				
2. GD: Anxiety	.74	(.81)			
3. Anxious Arousal	.65	.71	(.87)		
4. GD: Depression	.76	**.68$_a$**	**.57$_b$**	(.90)	
5. Anhedonic Depression	.54	**.38$_c$**	**.31$_d$**	.68	(.91)
Student 2 sample (N = 381)					
1. GD: Mixed	(.84)				
2. GD: Anxiety	.75	(.81)			
3. Anxious Arousal	.63	.71	(.88)		
4. GD: Depression	.73	**.67$_a$**	**.47$_b$**	(.90)	
5. Anhedonic Depression	.55	**.41$_b$**	**.28$_c$**	.68	(.91)
Student 3 sample (N = 516)					
1. GD: Mixed	(.85)				
2. GD: Anxiety	.71	(.78)			
3. Anxious Arousal	.58	.68	(.86)		
4. GD: Depression	.74	**.61$_a$**	**.46$_b$**	(.90)	
5. Anhedonic Depression	.57	**.39$_b$**	**.25$_c$**	.71	(.93)
Adult sample (N = 328)					
1. GD: Mixed	(.89)				
2. GD: Anxiety	.84	(.85)			
3. Anxious Arousal	.68	.69	(.88)		
4. GD: Depression	.78	**.69$_a$**	**.49$_b$**	(.92)	
5. Anhedonic Depression	.58	**.41$_{b,c}$**	**.38$_c$**	.72	(.93)
Patient sample (N = 470)					
1. GD: Mixed	(.91)				
2. GD: Anxiety	.86	(.86)			
3. Anxious Arousal	.75	.78	(.90)		
4. GD: Depression	.80	**.78$_a$**	**.59$_b$**	(.90)	
5. Anhedonic Depression	.69	**.60$_b$**	**.49$_c$**	.72	(.90)

Note. Scale reliabilities (coefficient alphas) are shown in parentheses. All correlations are significant at $p < .01$ (two-tailed). Discriminant correlations between the anxiety and depression scales are shown in boldface; coefficients between members of the same scale pair are underlined. Within a sample, discriminant correlations not sharing the same subscript differ significantly from one another at $p < .05$, two-tailed. MASQ = Mood and Anxiety Symptom Questionnaire; GD = General Distress.

iety and Depression scales. These data permit more extensive analyses of convergent and discriminant validity.

Correlations among all eight measures are presented in Table 3. The results indicated a high degree of convergence among both the anxiety and depression scales. Specifically, all of the convergent correlations among the anxiety scales were .64 or higher, with a mean coefficient of .76. Similarly, the convergent correlations for the depression scales were all .68 or greater, again with a mean value of .76. Thus, all of the symptom scales—including Anxious Arousal and Anhedonic Depression—showed a reasonably strong level of convergence with other purported measures of the same construct.

The discriminant correlations, however, varied enormously (range = .38 to .69). It is especially noteworthy that three of the four within-pair discriminant coefficients were high: that is, POMS Anxiety correlated .69 with POMS Depression, MASQ GD: Anxiety correlated .69 with GD: Depression, and the BAI correlated .62 with the BDI, which indicated that these scales share from 38% to 48% of their variance. In sharp contrast, Anxious Arousal and Anhedonic Depression correlated .38 with each other, reflecting only 14% shared variance; this was also the lowest discriminant correlation overall. Moreover, all of the discriminant correlations involving either Anxious Arousal or Anhedonic Depression were less than .55; only two other coefficients (the BDI's correlations with POMS Anxiety and MASQ GD: Anxiety) were below this value. As would be predicted by the tripartite model, Anxious Arousal and Anhedonic Depression clearly offered the sharpest differentiation of the constructs in this sample.

Factor analysis. That the MASQ specific scales offered the best differentiation does not necessarily mean that they represent the underlying constructs adequately. As noted earlier, this can only be evaluated in a complete convergent and discriminant context. We conducted two additional sets of analyses to examine how well the scales reflect their target constructs. First, we subjected the eight symptom scales to a principal components analysis. Not surprisingly, considering the magnitude of both the convergent and discriminant correlations in Table 3, this analysis demonstrated clear evidence of a strong general factor, which accounted for 68% of the total variance. Scale loadings on this general factor ranged from .73 (MASQ Anhedonic Depression) to .89 (POMS Depression).

However, a scree test of the plotted eigenvalues (Cattell, 1966) suggested the presence of a meaningful second factor, which accounted for an additional 14% of the variance; subsequent factors were all quite small. A preliminary varimax rotation indicated that the first two rotated factors could be identified as anxiety and depression, respectively. Because an oblique rotation (in which the factors are allowed to be correlated) provides a more realistic representation of the association between depression and anxiety, we conducted an additional promax rotation in which the varimax loadings were raised to a power of 3 (see Gorsuch, 1983; Hendrickson & White, 1964). Loadings on the resulting factors (which correlated .59 with one another) are shown in Table 4. For our purposes, the most noteworthy aspect of these data is that Anxious Arousal was the strongest marker of the anxiety factor, whereas Anhedonic Depression had the highest loading on Depression. Thus, these data indicated that the MASQ specific scales validly reflected the target constructs; at a more fundamental level, they supported the hypothesis that the differential assessment of anxiety and depression was enhanced by focusing on symptoms specific to each.

Hierarchical regression analyses. Finally, we conducted a series of hierarchical multiple regression analyses to determine the relative proportions of target (i.e., construct-specific) and nontarget (i.e., not construct-relevant) variance in each scale. Each of the eight symptom scales served as the criterion measure in a separate regression analysis. In each analysis, the four discriminant (nontarget) scores were entered as predictors in a single block in Step 1, followed by the three remaining convergent (target-construct) scales in Step 2. For example, in the analysis that used the BDI as the criterion to be predicted, the four anxiety scales were entered as a block in Step 1, followed

Table 3
Correlations Among Anxiety and Depression Scales in the Adult Sample

Scale	1	2	3	4	5	6	7	8
Anxiety scales								
1. POMS Anx	(.89)							
2. MASQ GD: Anx	.84	(.85)						
3. Beck Anx Inventory	.77	.76	(.90)					
4. MASQ Anxious Arousal	.64	.69	.79	(.88)				
Depression scales								
5. POMS Dep	$\underline{.69_a}$	.63	.65	.50	(.95)			
6. MASQ GD: Dep	.65	$\underline{.69_a}$	.63	.49	.89	(.92)		
7. Beck Dep Inventory	.52	.49	$\underline{.62_a}$	.44	.76	.71	(.89)	
8. MASQ Anhedonic Dep	.45	.41	.51	$\underline{.38_b}$	.70	.72	.68	(.93)

Note. $N = 328$. Scale reliabilities (coefficient alpha) are shown in parentheses. All correlations are significant at $p < .01$, two-tailed. Discriminant correlations between members of the same scale pair are underlined. Underlined correlations not sharing the same subscript differ significantly from one another at $p < .05$, two-tailed. POMS = Profile of Mood States; MASQ = Mood and Anxiety Symptom Questionnaire; Anx = Anxiety; Dep = Depression; GD = General Distress.

by the other three depression scales (POMS Depression, MASQ GD: Depression, Anhedonic Depression) in Step 2. In these analyses, the squared multiple correlation (R^2) after Step 1 represented the predictive contribution of the nontarget component, whereas the incremental R^2 change from Step 1 to Step 2 provided an estimate of the unique, construct-specific component for that scale.

The results are presented in Table 5. One important finding is that all eight scales clearly contain substantial amounts of both target and nontarget variance. However, among the anxiety scales, MASQ Anxious Arousal contains both the largest construct-specific component (comprising 38% of its variance) and the smallest nontarget element (27% of the variance). Thus, 59% of the predicted variance in Anxious Arousal is anxiety-specific. In contrast, the corresponding values for the other three anxiety scales range from 38% to 40%.

Similarly, among the depression scales, Anhedonic Depression has the smallest nontarget variance estimate (27%) and a relatively large depression-specific component (33%). Thus, 55% of its predicted variance is specific to depression; in contrast, the corresponding values for the three remaining depression scales are all just 40%. Consistent with the tripartite model, these data indicated that scales assessing symptoms hypothesized to be relatively unique to depression and anxiety (i.e., anhedonia and somatic arousal, respectively) overlapped the least with measures of the other construct. At the same time, these specific symptom scales were related strongly to more general measures of their respective constructs, so this gain in discriminant validity was not achieved by sacrificing convergent validity.

Table 4
Promax-Rotated Loadings of Anxiety and Depression Scales in the Adult Sample

	Loading on	
Scale	Factor 1	Factor 2
Anxiety scales		
MASQ Anxious Arousal	**.94**	−.11
MASQ GD: Anxiety	**.89**	.05
POMS Anxiety	**.83**	.11
Beck Anxiety Inventory	**.82**	.15
Depression scales		
MASQ Anhedonic Depression	−.14	**.96**
Beck Depression Inventory	.04	**.85**
POMS Depression	.19	**.81**
MASQ GD: Depression	.20	**.79**

Note. $N = 328$. Loadings of .30 or greater are shown in boldface. MASQ = Mood and Anxiety Symptom Questionnaire; POMS = Profile of Mood States; GD = General Distress.

Further Analyses of the Student 3 Sample

Correlational analyses. Data from the Student 3 sample also permitted more comprehensive analyses of convergent and discriminant validity. Recall that these participants completed six pairs of symptom scales (the two MASQ pairs, the Beck Inventories, and the POMS, HSCL, and HADS scales) as well as three measures of depressive or anxious cognitions (BHS, CCL-D, CCL-A).

Correlations among the 12 symptom scales are reported in Table 6. As in the adult data, these results demonstrated strong convergence among both the anxiety and depression scales. For the anxiety scales, the mean convergent coefficient was .67, with all but one of the correlations .55 or greater. The single exception to this general pattern was that Anxious Arousal correlated only .40 with the HADS Anxiety scale. For the depression scales, the mean convergent correlation was .71, with all of the individual coefficients .56 or greater.

However, as in the adult data, the discriminant correlations varied widely (range = .25 to .72). Note in particular that four of the six within-pair discriminant coefficients were quite high, ranging from .61 to .72 for the MASQ GD, Beck, POMS, and HSCL scales. These strong discriminant correlations indicated that these scales shared from 37% to 52% of their variance. In contrast, the HADS scales correlated .49 with one another, reflecting only 24% shared variance. Moreover, the MASQ spe-

Table 5
Estimating Target-Construct and Nontarget Variance in Anxiety and Depression Scales in the Adult Sample Using Hierarchical Multiple Regression

Scale	R^2 change at Step 1 (nontarget variance)	R^2 change at Step 2 (target variance)	Proportion of target variance
Anxiety scales			
POMS Anxiety	.482	.296	.38
MASQ GD: Anxiety	.489	.309	.39
Beck Anxiety Inventory	.469	.312	.40
MASQ Anxious Arousal	.267	.378	.59
Depression scales			
POMS Depression	.512	.338	.40
MASQ GD: Depression	.512	.338	.40
Beck Depression Inventory	.388	.260	.40
MASQ Anhedonic Depression	.269	.328	.55

Note. $N = 328$. All R^2 change values are significant at $p < .01$, two-tailed. POMS = Profile of Mood States; MASQ = Mood and Anxiety Symptom Questionnaire; GD = General Distress.

cific scales correlated only .25 with one another, reflecting a mere 6% shared variance. Furthermore, all of the discriminant correlations involving either Anxious Arousal or Anhedonic Depression were less than .50; in contrast, over 70% (18 of 25) of the remaining discriminant coefficients were greater than .55. Thus, replicating the adult data, symptom measures focusing on anhedonia and somatic arousal provided the clearest differential assessment.

Factor analysis. As before, we conducted additional analyses to determine how well the scales reflected their target constructs. First, we subjected the 12 symptom scales to a principal components analysis. Consistent with the adult data, a scree test of the plotted eigenvalues (Cattell, 1966) revealed a very strong general factor (accounting for 64% of the total variance), a meaningful second factor (contributing an additional 12%), and negligible factors thereafter. An initial varimax rotation indicated that the first two rotated factors could be identified as depression and anxiety, respectively; we then conducted an additional promax rotation using the same parameters as in the adult data. Loadings on the resulting factors (which again correlated .59 with one another) are presented in Table 7. Replicating the adult findings, the MASQ Anhedonic Depression and Anxious Arousal scales were the strongest markers of their respective factors. Thus, these data again demonstrate that scales assessing anhedonia and somatic arousal are clear, strong markers of the target constructs.

Hierarchical regression analyses. As before, we conducted a series of hierarchical regression analyses to determine the relative proportions of target and nontarget variance in each of the 12 scales. As in the previous analyses, each scale served as the criterion in a separate regression analysis; the six discriminant (nontarget) scores were entered as predictors in a single block in Step 1, followed by the five convergent (target-construct) scales in Step 2. The results, shown in Table 8, closely replicate those

Table 6
Correlations Among Anxiety and Depression Scales in the Student 3 Sample

Scale	1	2	3	4	5	6	7	8	9	10	11	12
Anxiety scales												
1. HSCL Anx	(.80)											
2. POMS Anx	.73	(.82)										
3. MASQ GD: Anx	.69	.76	(.85)									
4. Beck Anx Inventory	.76	.65	.71	(.88)								
5. HADS Anx	.73	.69	.62	.59	(.77)							
6. MASQ Anxious Arousal	.59	.55	.68	.72	.40	(.88)						
Depression scales												
7. HSCL Dep	$.72_a$	.66	.62	.68	.67	.47	(.87)					
8. POMS Dep	.65	$.69_a$	.63	.63	.61	.47	.86	(.94)				
9. MASQ GD: Dep	.60	.62	$.61_b$	.58	.61	.46	.82	.85	(.92)			
10. Beck Dep Inventory	.56	.49	.46	$.62_b$	.56	.36	.76	.69	.67	(.87)		
11. HADS Dep	.48	.46	.41	.45	$.49_c$	.30	.67	.61	.56	.69	(.69)	
12. MASQ Anhedonic Dep	.40	.44	.39	.41	.47	$.25_d$	.69	.68	.71	.60	.65	(.93)

Note. $N = 516$. Scale reliabilities (coefficient alpha) are shown in parentheses. All correlations are significant at $p < .01$, two-tailed. Discriminant correlations between members of the same scale pair are underlined. Underlined correlations not sharing the same subscript differ significantly from one another at $p < .05$, two-tailed. HSCL = Hopkins Symptom Checklist; POMS = Profile of Mood States; MASQ = Mood and Anxiety Symptom Questionnaire; HADS = Hospital Anxiety and Depression Scales; Anx = Anxiety; Dep = Depression; GD = General Distress.

Table 7
Promax-Rotated Loadings of Anxiety and Depression Scales in the Student 3 Sample

Scale	Loading on Factor 1	Loading on Factor 2
MASQ Anhedonic Depression	**.97**	−.19
HADS Depression	**.87**	−.08
Beck Depression Inventory	**.80**	.08
HSCL Depression	**.73**	.28
MASQ GD: Depression	**.73**	.23
POMS Depression	**.70**	.29
MASQ Anxious Arousal	−.22	**.95**
MASQ GD: Anxiety	.01	**.88**
Beck Anxiety Inventory	.10	**.82**
HSCL Anxiety	.16	**.77**
POMS Anxiety	.17	**.74**
HADS Anxiety	**.35**	**.53**

Note. $N = 516$. Loadings of .30 or greater are shown in boldface. MASQ = Mood and Anxiety Symptom Questionnaire; HADS = Hospital Anxiety and Depression Scale; HSCL = Hopkins Symptom Checklist; POMS = Profile of Mood States; GD = General Distress.

obtained with the adults. All of the scales again contained substantial amounts of both target and nontarget variance. However, the MASQ specific scales clearly contained the highest proportion of construct-specific variance. Among the anxiety scales, Anxious Arousal had both the largest specific component (35% of the variance) and the smallest nontarget element (27%). Overall, 56% of the predicted variance in Anxious Arousal was anxiety-specific; in contrast, the corresponding values for the other five anxiety scales ranged from 27% to 38%.

Similarly, among the depression scales, Anhedonic Depression had the most specific variance (36%) and the smallest nontarget component (26%). Overall, 58% of its predicted variance was specific to depression. In addition, the HADS Depression scale—which also focuses on positive emotional experiences—showed impressive specificity, as 51% of its predicted variance was depression-specific. In contrast, the corresponding values for the other four depression scales ranged from 28% to 39%. Thus, replicating the adult data and consistent with the tripartite model, focusing on symptoms of somatic arousal and anhedonia improves differentiation without sacrificing substantial convergent validity.[2]

Relations with the cognition scales. Previous research showed that two of the assessed cognition scales in this sample (CCL-D and BHS) are relatively specific to depression, whereas the third (CCL-A) is primarily related to anxiety (Beck et al., 1987; Beck, Riskind, et al., 1988). These measures therefore permit further examination of the convergent and discriminant validity of the symptom scales.

As one would expect, the CCL-D and BHS were highly intercorrelated ($r = .53$) in these data; however, both of these scales also were significantly related to the CCL-A (for CCL-D, $r = .65$; for the BHS, $r = .35$). These findings are consistent with previous studies demonstrating moderate to strong correlations between anxious and depressive cognitions (e.g., Beck et al., 1987). Accordingly, we computed partial correlations between the symptom and cognition scales that eliminated the nonspecific variance in the latter. That is, we computed partial correlations between the symptom scales and the CCL-A controlling for both the CCL-D and BHS; conversely, we computed partial correlations with the CCL-D and BHS that controlled for scores on the CCL-A.

These partial correlations are shown in Table 9. To demonstrate acceptable convergent and discriminant validity, the anxiety symptom scales should be associated more strongly with anxious than depressive cognitions; conversely, the depression symptom scales should be related more highly to the CCL-D and BHS than the CCL-A. Whereas all of the depression scales met these validity criteria, the data in Table 9 indicate that in three of the six scale pairs (HSCL, POMS, and HADS), the anxiety scale failed to do so. Among the three remaining pairs, the Beck Inventories clearly showed the strongest convergent validity (with *r*s ranging from .40 to .56) while still maintaining acceptable discriminant validity (*r*s ranged from .12 to .25). Conversely, the MASQ specific scales demonstrated the best discriminant validity (*r*s ranged from .02 to .09) and also showed good convergent validity (*r*s ranged from .35 to .44). Finally, the MASQ GD scales fell in between, demonstrating a relatively good—but not optimal—convergent and discriminant pattern. Thus, in contrast to the previous analyses—in which the MASQ specific scales showed both good discriminant and strong convergent validity—there appears to be a modest trade-off between convergent and discriminant validity in these symptom-cognition relations. The Beck Inventories, which assess the constructs more broadly, displayed the strongest convergent validity, whereas the more specifically focused scales of the MASQ showed superior discriminant validity.

Discussion

Implications of the Findings

Several aspects of these data are noteworthy. First, the measures of anxiety and depression generally showed excellent convergent validity. Analyses in the adult and Student 3 samples yielded average convergent correlations of .76 and .67, respectively, for the anxiety scales, and .76 and .71, respectively, for depression. Thus, different measures of the same construct tended to be strongly interrelated.

However, the correlations between anxiety and depression varied enormously across the various scales and samples, ranging from .25 (between Anxious Arousal and Anhedonic Depression in the Student 3 sample) to .78 (between GD: Anxiety and GD: Depression in the patient sample). Within this range, some

[2] One could argue that the MASQ GD: Mixed scale should be included in the hierarchical regression analyses in order to assess more completely the non-construct-specific variance. We therefore reconducted both the adult and Student 3 analyses, using this scale as an additional predictor in Step 1. For our purposes, the most noteworthy finding was that the scales still showed the same relative pattern. That is, Anxious Arousal still had the largest proportion of construct-specific variance of any anxiety scale in both data sets (28% and 41% in the adult and Student 3 analyses, respectively); similarly, Anhedonic Depression had the largest proportion of target variance (34%) of any depression scale in the adult data, and the second-largest proportion (42%, compared with 44% for HADS Depression) in the Student 3 data.

Table 8
Estimating Target-Construct and Nontarget Variance in Anxiety and Depression Scales in the Student 3 Sample Using Hierarchical Multiple Regression

Scale	R^2 change at Step 1 (nontarget variance)	R^2 change at Step 2 (target variance)	Proportion of target variance
Anxiety scales			
HSCL Anxiety	.539	.207	.28
POMS Anxiety	.503	.211	.30
MASQ GD: Anxiety	.447	.269	.38
Beck Anxiety Inventory	.508	.251	.33
HADS Anxiety	.466	.171	.27
MASQ Anxious Arousal	.267	.346	.56
Depression scales			
HSCL Depression	.605	.237	.28
POMS Depression	.554	.268	.33
MASQ GD: Depression	.488	.308	.39
Beck Depression Inventory	.461	.229	.33
HADS Depression	.291	.305	.51
MASQ Anhedonic Depression	.264	.363	.58

Note. $N = 516$. All R^2 change values are significant at $p < .01$, two-tailed. HSCL = Hopkins Symptom Checklist; POMS = Profile of Mood States; MASQ = Mood and Anxiety Symptom Questionnaire; HADS = Hospital Anxiety and Depression Scale; GD = General Distress.

scales demonstrated consistently better discriminant validity than others. Most notably, the Anxious Arousal and Anhedonic Depression scales showed the best discriminant validity in every analysis. These results corroborate a key prediction of Clark and Watson's (1991) tripartite model, namely, that differentiation can be improved by deemphasizing the importance of nonspecific symptoms and by focusing instead on the symptoms that are relatively unique to each construct. Unlike the other symptom measures, the MASQ specific scales were constructed explicitly to assess these unique symptom clusters of somatic tension and arousal (specific to anxiety) and anhedonia and low Positive Affect (specific to depression).

Furthermore, our results showed that this enhanced differentiation was achieved without a substantial loss of convergent validity. That is, factor analyses of the MASQ scales—together with other well-established anxiety and depression symptom measures—indicated that Anxious Arousal and Anhedonic Depression were excellent markers of the underlying constructs. Moreover, hierarchical multiple regression analyses revealed that these specific scales generally contained both the most construct-specific variance and the least nontarget variance. Thus, consistent with the tripartite model, construct-specific scales show excellent convergent and discriminant validity and provide clearer, more precise assessment of the target constructs.

However, one cannot conclude from these data that no convergent validity has been sacrificed or that no important construct-relevant information has been lost in the creation of the specific scales. For instance, in partial correlation analyses with measures of anxious and depressive cognitions, the BAI and BDI exhibited better overall convergent validity than did Anxious Arousal and Anhedonic Depression. To some extent, this enhanced convergent validity may reflect the fact that these symptom and cognition scales actually contain very similar content; for example, the BDI and CCL-D both assess self-perceived hopelessness, worthlessness, and unattractiveness. On the other hand, these higher convergent correlations may indicate that important symptom content is missing from the MASQ specific scales. These possibilities need to be tested in future research.

At a more fundamental level, we emphasize that specific scales alone do not provide complete and comprehensive assessment of these constructs. As Clark and Watson (1991) argued, a complete description of this domain requires assessing all three symptom groups comprising the tripartite structure. In other

Table 9
Partial Correlations (Controlling for the Other Type of Cognition) of Anxiety and Depression Scales With Measures of Anxious and Depressive Cognitions in the Student 3 Sample

	Cognition scale		
Symptom scale	CCL-A	CCL-D	BHS
HSCL Anxiety	**.27****	.27**	**.28****
HSCL Depression	.14**	**.52****	**.50****
POMS Anxiety	**.24****	.19**	**.24****
POMS Depression	.08	**.47****	**.42****
MASQ GD: Anxiety	**.27****	.15**	**.17****
MASQ GD: Depression	.13**	**.47****	**.43****
Beck Anxiety Inventory	**.40****	.25**	**.23****
Beck Depression Inventory	.12**	**.56****	**.48****
HADS Anxiety	**.22****	.29**	**.30****
HADS Depression	.04	**.43****	**.43****
MASQ Anxious Arousal	**.35****	.09*	.05
MASQ Anhedonic Depression	.02	**.41****	**.44****

Note. $N = 516$. Convergent correlations are shown in boldface. CCL-A = Cognitions Checklist Anxiety Scale; CCL-D = Cognitions Checklist Depression Scale; BHS = Beck Hopelessness Scale; HSCL = Hopkins Symptom Checklist; POMS = Profile of Mood States; MASQ = Mood and Anxiety Symptom Questionnaire; HADS = Hospital Anxiety and Depression Scale; GD = General Distress.
* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

words, it is not sufficient to measure only the two unique symptom clusters. We have not focused on the nonspecific symptoms in this paper because we were interested primarily in demonstrating the improved differentiation that can be achieved by assessing anhedonia and somatic arousal; nevertheless, it is clear that nonspecific symptoms of general distress also must be included in a comprehensive assessment of depression and anxiety.

Note, however, that this does not mean that the specific and nonspecific symptoms should be combined together in the same scale. On the contrary, we would argue that the best approach is to keep these different types of symptoms separate from one another. For example, the full MASQ includes three scales (GD: Mixed, GD: Anxiety, GD: Depression) containing nonspecific symptoms, as well as the two scales for the unique symptom clusters. Used together, these different types of scales can provide a reasonably comprehensive assessment of the domain, while at the same time preserving important information regarding these different types of symptoms.

Limitations of the Study

We must also note three basic limitations of our study. First, we generally found similar results across our student, adult, and patient samples. This convergence is very reassuring, and it suggests that our findings are generalizable across both nonclinical and clinical samples. Nevertheless, our clinical sample clearly was less than optimal for testing the tripartite model. That is, although the patients reported elevated levels of depressive symptoms, they did not report substantial amounts of anxiety. Furthermore, because we lacked the necessary diagnostic information, it was impossible to determine how many of the patients actually met *DSM-III-R* criteria for a mood disorder. Thus, these results clearly need to be replicated in a sample of patients exhibiting clinically significant levels of both depression and anxiety; moreover, in the absence of such replication, it cannot be assumed that our results necessarily will generalize to patients meeting *DSM-III-R* criteria for mood or anxiety disorders.

Second, we examined only self-report data in this study. Scales developed to assess the construct-specific factors of the tripartite model showed excellent convergent and discriminant validity within this rather limited context; ultimately, however, it is necessary that the model be evaluated against a broader range of measures. Most notably, it is important to examine (a) whether these factors can be found when clinicians rate anxious and depressive symptoms, and (b) how these factors relate to mood and anxiety disorder diagnoses and other important clinical criteria. Only then can the validity of the tripartite model be established clearly.

Third, although our analyses have confirmed key predictions of the tripartite model, it must be emphasized that they offer support only for the broad outlines of this model. Recall that (with some subsequent minor refinements) the MASQ symptoms were rationally grouped into scales on the basis of their content. For instance, anxious symptoms that were judged to be relatively nonspecific were placed in GD: Anxiety, whereas items that appeared to reflect somatic tension and arousal were included in Anxious Arousal. Although we have demonstrated that Anxious Arousal has substantially better discriminant validity than GD: Anxiety, we have not shown that each of the items was placed in the most appropriate scale. In other words, some of the rational judgments that guided scale construction may have been faulty: for example, some Anxious Arousal items might be better placed in GD: Anxiety, and vice versa. If so, then the scales can be further improved by examining properties of the individual symptoms more closely. This is a key issue in the second article in this series (Watson et al., 1995), which examines the factor structure of the 90 MASQ items across the five samples.

Conclusion

Despite these important limitations, we believe that our findings have three broad implications. Clark and Watson's (1991) tripartite model offers a useful conceptual guide for grouping and classifying the symptoms in this domain. Evidence regarding discriminant validity needs to be considered carefully and weighted heavily in the construction of anxiety and depression symptom scales. Finally, differentiation of these constructs can be improved substantially without a notable loss of convergent validity.

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