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Differentiating Symptoms of Anxiety and Depression in Older Adults: Distinct Cognitive and Affective Profiles?

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Cognitive and affective dimensions of symptoms of anxiety and depression were examined in a sample of 283 community-dwelling older adults (ranging in age from 65 to 93 years). A principal-axis factor analysis with varimax rotation conducted on the Cognition Checklist (CCL) revealed a factor structure different than that found in younger adults. Three factors emerged (Anxious, Social Loss, and Negative Self-Evaluation/Worthlessness Cognitions) and, in general, these cognitions were not specifically related to anxious and depressive symptoms. Instead, worthlessness cognitions were robustly associated with both anxious and depressive symptoms, including variance that was unique to each. In terms of affective dimensions, factor analyses revealed that only anxiety-related items loaded on the negative affectivity subscale. Consequently, negative affectivity was strongly related to variance that was unique to anxious symptoms, but was only weakly related to variance that was unique to depressive symptoms. On the other hand, positive affectivity was only weakly associated with both forms of symptomatology. Findings are discussed in terms of the cognitive and affective distinctions between older and younger adulthood.

KEY WORDS: anxiety; older adults; cognition; depression; affect.

INTRODUCTION

Although there is considerable overlap between depression and anxiety (Clark, 1989; Dobson, 1985; Stavrakaki & Vargo, 1986), a number of studies have demonstrated that these conditions can be differentiated in terms of their cognitive and affective profiles. Beck's cognitive content-specificity hypothesis states that each type of emotional distress is accompanied by its own unique cognitive products (i.e., automatic thoughts, and involuntary and repetitive images; Beck, 1976). More specifically, depression is thought to be associated with thoughts involving personal loss or failure and negative attitudes toward the past and future (Beck, Brown, Steer, Eidelson, & Riskind, 1987; Beck, Rush, Shaw, & Emery, 1979), whereas anxi-

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ety is thought to be characterized by future-oriented cognitions containing themes of danger (Beck & Emery, 1985). Further, anxious people are thought to misinterpret experiences as involving either a physical or psychosocial threat and to overestimate the probability and intensity of anticipated harm (Beck et al., 1987).

To investigate differences in the automatic thoughts characteristic of anxiety and depression, Beck et al. (1987) developed the Cognition Checklist (CCL). Results of factor analyses suggested that the CCL is composed of two primary dimensions reflecting depressive and anxious cognitions (Beck et al., 1987; Steer, Beck, Clark, & Beck, 1994). The Depressive Cognition Subscale (CCL-D) is composed of 14 items reflecting negative thoughts about one's self, past experiences, and future expectations, whereas the Anxious Cognition Subscale (CCL-A) is composed of 12 items representing thoughts about personal and physical danger. In support of the cognitive content-specificity hypothesis, outpatients diagnosed according to the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.) (DSM-III; American Psychiatric Association [APA], 1980) and DSM-III-R (APA, 1987) with anxiety disorders, had higher mean CCL-A scores than patients diagnosed with depression. In contrast, depressed patients had higher CCL-D scores than anxiety patients (Beck et al. 1987; Clark, Beck, & Stewart, 1990; Steer et al., 1994). Similarly, Clark, Beck, and Brown (1989) found, in an outpatient sample, that anxious cognitions were uniquely related to higher levels of anxious symptoms (controlling for levels of depressive cognitions and symptoms) and that depressive cognitions were uniquely related to higher levels of depressive symptoms (controlling for levels of anxious cognitions and symptoms). Further, depressive cognitions assessed with related cognitive measures have been shown to be more closely associated with depressive mood than with other mood states (Clark, 1986; Harrell, Chambless, & Calhoun, 1981; Thorpe, Barnes, Hunter, & Hines, 1983). Finally, Ingram, Kendall, Smith, Donnell, and Ronan (1987) found that depressed students reported significantly more negative self-referent automatic thoughts than test-anxious and nondepressed/nonanxious students, whereas test-anxious students reported significantly more automatic anxious (i.e., task-irrelevant) cognitions than depressed and nondepressed/nonanxious students.

In contrast to the cognitive content-specificity hypothesis, Watson, Clark, and Carey (1988) posited that dimensions of affect are useful in differentiating symptoms of depression and anxiety. Watson and colleagues found self-reported mood to be characterized by two dominant dimensions: positive and negative affect (Tellegen, 1985; Watson, Clark, & Tellegen, 1984; Watson & Kendall, 1989; Watson & Tellegen, 1985). Positive affectivity (PA) was defined as the "extent to which a person avows a zest for life" (Watson & Tellegen, 1985, p. 221) or the "level of pleasurable engagement with the environment" (Watson & Kendall, 1989, p. 10). High PA is associated with enthusiasm, joy, high energy, mental interest and alertness, and determination, whereas low PA reflects fatigue and sadness (Watson & Kendall, 1989). On the other hand, negative affectivity (NA) was defined as the "extent to which a person reports feeling upset or unpleasantly aroused" (Watson & Tellegen, 1985, p. 221). High NA includes such feelings as nervousness, anger, guilt, fear, and the like, whereas low NA is associated with feelings of calmness and relaxation (Watson & Kendall, 1989). Watson, Clark, and Tellegen (1988) de-

veloped the Positive and Negative Affect Schedule (PANAS) to serve as a measure of these two mood factors.

Watson and colleagues have hypothesized that anxiety essentially is a state of NA, without a substantial PA component, whereas depression is a mixed state of high NA and low PA. Thus, they have proposed a two-factor affectivity model claiming that (1) NA is a common characteristic of both anxiety and depression and, therefore, is a major factor in producing the strong correlation between them; and (2) low PA is unique to depression and consequently may be important in the differentiation of anxiety and depression (Watson, Clark, & Carey, 1988). Consistent with this model, a number of studies employing clinical and nonclinical samples found that *both* anxiety and depression ratings were correlated with or had strong positive factor loadings on NA, but *only* depression ratings were correlated with or had moderate (negative) factor loadings on PA (e.g., Tellegen, 1985; Watson, Clark, & Carey, 1988; Watson & Kendall, 1989).

Several studies have recently tested the validity of the cognitive and affectivity models in conjunction with one another. For example, Clark, Steer, and Beck (1994) found support for both models, utilizing both clinical and nonclinical samples. Analyses of responses to the Beck Anxiety and Beck Depression Inventories yielded two correlated factors: Depression and Anxiety. As predicted by Watson's affectivity model, a large general distress or NA factor was found to underlie the relationship between these two first-order factors. After controlling for NA, specific depression and anxiety dimensions emerged, including depressive symptoms indicative of low PA (e.g., sadness and social withdrawal). Also, as hypothesized by Beck's cognitive content-specificity model, cognitions dealing with personal loss and failure loaded significantly on the depression factor, but not on the anxiety factor. Steer, Clark, Beck, and Ranieri (1995) replicated these findings in an outpatient sample. Similarly, Jolly, Dyck, Kramer, and Wherry (1994) found support for both cognitive and affectivity models among psychiatric outpatients. NA was associated with both anxious and depressive symptoms, whereas PA was found to be more strongly related to depressive symptoms than to anxious symptoms. In accord with the cognitive model, CCL-D scores correlated more strongly with depressive symptoms than anxious symptoms. However, Jolly et al. found that the strength of the correlations between CCL-A scores and anxious and depressive symptoms were not significantly different (see Ambrose & Rholes, 1993, for similar results).

Overall, a number of studies have found support for the cognitive content-specificity hypothesis and the affectivity model in differentiating symptoms of anxiety and depression. However, no study to date has explored these models in older adults. Because there is considerable evidence that late-life depression (and perhaps anxiety) are phenomenologically different from those occurring at other stages of the life cycle (Blazer, George, & Landerman, 1986; Gurian & Miner, 1991), the generalizability of the cognitive and affectivity models to older adults needs to be examined. In addition to differences in the prevalence of depressive and anxious disorders (Regier et al., 1988) and affective states (Lawton, Kleban, & Dean, 1993), numerous studies have found that elderly depressed individuals display somewhat different symptom profiles than their younger counterparts.

A number of studies have found that depressed older adults report fewer affective symptoms. For example, dysphoric mood (Arean & Miranda, 1992; Craig & Van Natta, 1979; Gallo, Anthony, & Muthen, 1994; Goldfarb, 1974), self-blame (Musetti et al., 1989), and guilt (Gallo et al., 1994) all have been found to be less pervasive in older adults with depression than among younger depressed persons. Instead, feelings of emptiness, impulses to cry, and irritability seem to be more characteristic of late-life depression (Blazer, 1993). Feelings of helplessness and hopelessness about the future also have been found to be more central to late-life depression (Blazer, 1993), but other studies have found that suicidal ideation occurs less in depressed older adults (Blazer, Bachar, & Hughes, 1987; Musetti et al., 1989).

Compared to their younger counterparts, depressed older adults also have been found to experience considerably more somatic symptoms, including weight or appetite loss (Blazer et al., 1987; Brodaty et al., 1991; Musetti et al., 1989), constipation (Blazer et al., 1986; Blazer et al., 1987), fatigue (Blazer et al., 1986; Gallo et al., 1994), abdominal and back pain (Blazer et al., 1986), and insomnia (Gallo et al., 1994). Studies also have found support for both increased psychomotor retardation (Brodaty et al., 1991; Gallo et al., 1994; Musetti et al., 1989) *and* psychomotor agitation (Brodaty et al., 1991) in depressed older adults. Because somatic symptoms such as these seem likely to be a result of physical illness associated with aging, Blazer et al. (1986) noted that nondepressed older adults were no more likely to complain of these symptoms than younger adults (except for possibly constipation and insomnia).

Whereas there has been considerable research on symptomatology in late-life depression, research in a complementary area in late-life anxiety has been very sparse. It has been found that, of the anxiety disorders, older adults most often suffer from simple phobias, agoraphobia, and generalized anxiety disorder (Blazer, George, & Hughes, 1991; Weissman et al., 1985). However, there is little agreement about what a classic presentation of anxiety in the elderly looks like (Gurian & Miner, 1991; Shamoian, 1991). Salzman (1982), for example, claimed that anxiety in the elderly, especially anxiety over declining health and personal loss, may be experienced as "cognitive apprehension, behavioral agitation, or somatic symptoms with hypochondriacal components" (p. 71). Others (e.g., Busse, 1975; Lader, 1982) have emphasized somatic symptoms, stating that older adults tend to become obsessed with the physical symptoms of anxiety and ultimately may experience hypochondriacal symptoms. Still others (e.g., Pfeiffer, 1979) have claimed that anxiety in the elderly is expressed more directly as "overt fear, panic, worry or bewilderment, and without the intricate conversion mechanism customarily seen in younger persons" (Pfeiffer, 1979, p. 28). Recently, Beck, Stanley, and Zebb (1996) found that late-life generalized anxiety disorder is characterized by elevated levels of anxiety, worry, social fears, and depression.

Because these late-life symptom profiles have been found to differ from those occurring at earlier stages of life, it cannot be assumed that the cognitive content-specificity and affectivity models can be extended to older adults. The current study attempted to determine whether cognitions and affective states are useful in differentiating symptoms of anxiety and depression in older adults. First, assuming

these models *can* be extended to older adults, it was predicted that a factor analysis of the responses of elderly participants on the Cognition Checklist (CCL) would yield a two-factor structure similar to that found by Beck et al. (1987) and Steer et al. (1994) (i.e., anxious and depressive cognitions). Likewise, it was predicted that a factor analysis of the Positive and Negative Affect Schedule (PANAS) would yield a two-factor structure that represents the two major mood dimensions: PA and NA (Watson, Clark, & Tellegen, 1988). Second, consistent with the cognitive content-specificity hypothesis, it was expected that anxious cognitions would be more strongly predictive of anxiety than depressive cognitions, whereas depressive cognitions would be more strongly predictive of depression than anxious cognitions. Consistent with the affectivity model, it was expected that negative affectivity would be predictive of symptoms of both anxiety and depression, whereas positive affectivity would only be predictive of symptoms of depression.

METHOD

Participants and Procedure

Participants were 283 adults 65 years of age and older (M = 73.99, SD = 5.76, range = 65 to 93), who were recruited from senior citizens' centers, church groups, and other similar social organizations. All participants were volunteers who completed measures in anonymity. Participants consisted of 212 women (75%) and 67 men (24%), although four individuals failed to report gender. Eighty-eight percent were Caucasian, 4% were African American, 0.7% were American Indian, 0.4% were Asian American, 0.4% were Hispanic, and 3% were of another ethnicity. Nine individuals failed to report ethnicity. In terms of the highest level of education reached, 6% reached the elementary level, 14% completed at least some high school, 46% graduated from high school, 16% completed some college, 7% graduated from college, and 7% completed at least some graduate work. Nine individuals failed to report level of education.

Measures

Cognition Checklist (CCL)

The CCL (Beck et al., 1987) is a 26-item self-report measure consisting of two subscales: the Depressive Cognition subscale (CCL-D) and the Anxious Cognition subscale (CCL-A), designed to measure the frequency of depressive and anxious cognitions, respectively. Scores on each of the CCL subscales have been found to correlate significantly with clinician ratings of depression and anxiety in young/middle-age adults and to discriminate depressed young/middle-age adults from same age anxious adults (Beck et al., 1987; Steer et al., 1994). The validity of the CCL has never been examined in older adults.

Positive and Negative Affect Schedule (PANAS)

The PANAS (Watson, Clark, & Tellegen, 1988) is a 20-item measure of affect consisting of two 10-item scales: PA and NA. Watson, Clark, and Tellegen (1988) demonstrated high internal consistency (for PA, alpha = .88; for NA, alpha = .85) and excellent convergent and discriminant validity when used with college students. However, the consistency and validity of this scale when used with older adults has yet to be tested.

Beck Depression Inventory (BDI)

The BDI (Beck, Steer, & Garbin, 1988) is a 21-item self-report measure developed to assess the severity of depressive symptoms. The BDI has been found to possess high internal consistency (alpha = .86) as well as high convergent and discriminant validity in young/middle-age adults (Beck, Steer, & Garbin, 1988). It also has been found to have high sensitivity and specificity (Olin, Schneider, Eaton, Zemansky, & Pollock, 1992) and high internal consistency in older adult samples (alpha = .91; Gallagher, Nies, & Thompson, 1982).

Geriatric Depression Scale—Short Form (GDS-SF)

The GDS-SF (Sheikh & Yesavage, 1986) is a self-report measure comprised of 15 items from the original 30-item GDS (Yesavage et al., 1983). The GDS was specifically developed for use in the elderly by excluding questions related to somatic complaints. Although depressed older adults experience somatic symptoms, as previously discussed, the degree to which these symptoms reflect depression is debatable because of the increased rate of medical illness in this population. Instead, this instrument emphasizes mood, cognitive, and behavioral symptoms (e.g., "Do you feel that your life is empty?" and "Do you often feel helpless?"). Also, the yes/no format of the GDS provides a simpler task for older adults. The GDS-SF has been found to have a high sensitivity and specificity in elderly samples when a cutoff score of 7 is employed (Lesher & Berryhill, 1994).

Beck Anxiety Inventory (BAI)

The BAI (Beck, Epstein, Brown, & Steer, 1988) is a 21-item self-report inventory designed to assess the severity of anxiety symptoms. Fourteen items assess somatic symptoms, whereas seven assess cognitive and affective symptoms of anxiety. Initial studies have indicated that the BAI has high internal consistency (alpha = .92) and adequate convergent and discriminant validity (Beck, Epstein et al., 1988). Preliminary work has found the BAI to have high internal consistency (alpha = .87) and acceptable temporal stability (.78) when used in older adults (Morin, Stone, Ling, & Trinkle, 1994).

State-Trait Anxiety Inventory (STAI)

The STAI (Spielberger, Gorsuch, & Lushene, 1970) is a 40-item inventory consisting of two 20-item subscales that measure state (STAI-S) and trait (STAI-T) anxiety. Only the State subscale was included in this study because current emotional distress was of primary interest. The State subscale has been found to be internally consistent and valid when used with both younger and older adults (Patterson, O'Sullivan, & Spielberger, 1980).

RESULTS

Factor Analysis of the Cognition Checklist

A confirmatory factor analysis with LISREL 8.14 (Jöreskog & Sörbom, 1996) was conducted to test the two-factor model suggested by Beck et al. (1987). Only participants who had complete data on the CCL were included in these analyses (n = 264). This model provided an inadequate fit to the data, $\chi^2(298, N = 264) = 1122.88$, $p < .001$, χ^2/df ratio = 3.77; Goodness-of-Fit Index (GFI) = .73; adjusted GFI (AGFI) = .68. Consequently, several different exploratory factor analyses were conducted on the CCL, including principal-components and alpha factor analyses, using both oblique and orthogonal rotations. Although the factor loadings and eigenvalues found in all approaches were similar in magnitude, the principal-axis factor analysis with varimax rotation was chosen because confirmatory factor analysis indicated that it provided the best fit (see below).

The principal-axis factor analysis yielded six factors with eigenvalues greater than 1. However, a scree test suggested a three-factor solution. In addition, Factors 4 through 6 were uninterpretable and were composed of fewer than three items. Consequently, this analysis was rerun selecting for three factors. The three-factor solution accounted for 49.5% of the total variance in CCL scores. Factor 1 accounted for 33.6% of the variance and was composed exclusively of items from Beck et al.'s (1987) original CCL-A subscale (see Table I). Factors 2 and 3 were composed of items from Beck et al.'s (1987) original CCL-D subscale (except one CCL-A item that loaded on the third factor), and accounted for 9.9% and 6.0% of the variance, respectively.

Upon examination, it was determined that Factor 1 consisted of items pertaining to cognitions about anxiety over health issues. The remaining factors represented two facets of depressive thinking: cognitions concerning loss of social role and negative self-evaluation/worthlessness cognitions. Subscales were created based on this factor structure (CCL-AH, CCL-S, and CCL-W, respectively). In order to maximize the distinctiveness of the scales, inclusion was restricted to items with a primary loading of at least .50 on a given factor; items with a secondary loading of .30 or greater on any other factor were omitted. The final scales consisted of 5, 6, and 4 items, respectively. Confirmatory factor analysis indicated that this revised three-factor solution provided an adequate fit to the data, $\chi^2(87, N = 264) = 241.55$, $p < .001$, χ^2/df ratio = 2.78; GFI = .89, AGFI = .85. When three pairs of error

Table I. Varimax-Rotated Factor Loadings for Cognition Checklist (CCL) Items[a]

	CCL item	Factor 1	Factor 2	Factor 3
10.	What if I get sick and become an invalid? (A)	.60		
11.	Something might be happening that will ruin my appearance. (A)	.53	.30	
12.	I am going to be injured. (A)	.62		
13.	What if no one reaches me in time to help? (A)	.61		
14.	I'm going to have an accident. (A)	.77		
15.	I might be trapped. (A)	.66		
16.	I am not a healthy person. (A)	.48		.33
17.	There's something very wrong with me. (A)	.47		.33
23.	I'm going to have a heart attack. (A)	.53		.44
25.	Something will happen to someone I care about. (A)	.54		.31
3.	People don't respect me anymore. (D)		.60	
4.	No one cares whether I live or die. (D)		.67	
5.	I'm worse off than they are. (D)		.50	.34
6.	I don't deserve to be loved. (D)		.65	
7.	I've lost the only friends I've had. (D)		.57	
8.	I'm not worthy of people's attention or affection. (D)		.76	
9.	There's no one left to help me. (D)		.72	
18.	Life isn't worth living. (D)			.56
19.	I'm worthless. (D)			.64
20.	I have become physically unattractive. (D)			.57
21.	I will never overcome my problems. (D)			.71
22.	Something awful is going to happen. (A)	.43		.60
26.	Nothing ever works out for me anymore. (D)	.37		.52

[a]Factor loadings of less than .30 were omitted. (A) = CCL Anxiety subscale, (D) = CCL Depression subscale (Beck et al., 1987).

terms (Items 10 and 13, 7 and 9, and 6 and 8) were allowed to correlate, as suggested by the modification indices, confirmatory factor analysis indicated an even better fit, $\chi^2(84, N = 264) = 180.18$, $p < .001$, χ^2/df ratio = 2.15; GFI = .92, AGFI = .88. Scale items then were weighted based on their factor loadings.

Factor Analysis of the Positive and Negative Affect Schedule

A confirmatory factor analysis was also conducted to test the two-factor model suggested by Watson, Clark, and Tellegen (1988). Only participants who had complete data on the PANAS were included in these analyses ($n = 243$). This model provided an inadequate fit to the data, $\chi^2(169, N = 243) = 428.58$, $p < .001$, χ^2/df ratio = 2.54; GFI = .85; AGFI = .81. Consequently, similar to the analysis of the CCL, a principal-axis factor analysis with varimax rotation was conducted on the PANAS.

The principal-axis factor analysis yielded four factors with eigenvalues greater than 1. However, a scree test suggested a two-factor solution and Factors 3 and 4 were composed of fewer than three items. Consequently, this analysis was rerun selecting for two factors. The two-factor solution accounted for 44.9% of the total variance in PANAS scores. Factor 1 accounted for 27.6% of the variance and was composed exclusively of items representing positive affectivity. Factor 2 accounted

for an additional 17.3% of the variance and was composed exclusively of items representing negative affectivity. The item composition of these factors was identical to that found by Watson, Clark, & Tellegen (1988). However, after employing our strict inclusion criteria to create the subscales (i.e., a primary loading of at least .50 with no secondary loading of .30 or greater), three items ("guilty," "hostile," and "ashamed") were dropped from the NA scale and one item ("excited") was dropped from the PA scale. Confirmatory factor analysis indicated that this revised factor solution provided an adequate fit to the data, $\chi^2(103, N = 243) = 241.68$, $p < .001$, χ^2/df ratio = 2.35; GFI = .89, AGFI = .85. However, the error term of one item ("upset") was found to correlate with four other error terms, and was therefore omitted from the scale. Likewise, the modification indices suggested that one pair of error terms ("scared" and "afraid") be allowed to correlate. The final NA scale, Negative Affect—Revised (NA-R), consisted of six items ("nervous," "jittery," "afraid," "scared," "distressed," and "irritable") and the final PA scale, Positive Affect—Revised (PA-R), was composed of nine items ("interested" "strong," "enthusiastic," "proud," "alert," "inspired," "determined," "attentive," and "active"). Confirmatory factor analysis indicated that this revised factor solution provided a better fit to the data, $\chi^2(88, N = 243) = 143.80$, $p < .001$, χ^2/df ratio = 1.63; GFI = .93, AGFI = .90. Scale items were weighted based on their factor loadings.

Descriptive Statistics

Univariate analyses of variance were conducted on the entire sample to assess the influence of demographic factors (including age, gender, ethnicity, and education) on our measures of cognition, affect, and symptomatology. Females ($M = 9.8$) scored significantly higher than did males ($M = 8.3$) on the NA-R scale, $t(164.7) = 3.60$, $p < .001$, separate variance test. Also, education was correlated with PA-R, $r = .24$, $p < .001$, and STAI-S, $r = -.13$, $p < .05$. Individuals with higher education tended to report higher levels of positive affectivity and lower levels of anxiety. Age was also correlated with PA-R, $r = -.18$, $p < .01$, indicating that older individuals tended to report lower levels of PA. No other demographic variable was significantly related to predictor or outcome variables.

Specificity Analyses

Only participants who had complete data on all of the questionnaires were included in the subsequent analyses ($n = 189$). Total means, standard deviations, and alpha coefficients for each of the measures are presented in Table II. Pearson correlations were used to examine the relations among symptoms of anxiety and depression and CCL and PANAS scores. Consistent with research on younger adults, measures of depressive symptoms were moderately correlated with measures of anxious symptoms (rs ranged from .47 to .57; see Table II). There were also moderate intercorrelations among the three cognition measures (rs ranged from .36 to .44). The correlation between the PA-R and NA-R scales was low ($r = -.25$)

Table II. Means, Standard Deviations, Alpha Coefficients, and Zero-Order Correlations Among Measures[a]

Measure	CCL-AH	CCL-S	CCL-W	PA-R	NA-R	BDI	GDS-SF	BAI	STAI-S	*M*	*SD*	α
CCL-AH	—									2.39	2.31	.81
CCL-S	.36[d]	—								1.48	2.61	.84
CCL-W	.44[d]	.39[d]	—							0.80	1.42	.78
PA-R	−.26[d]	−.17[b]	−.28[d]	—						31.63	7.08	.88
NA-R	.34[d]	.15[b]	.39[d]	−.25[d]	—					9.25	3.48	.83
BDI	.41[d]	.15[b]	.54[d]	−.33[d]	.54[d]	—				6.14	4.89	.77
GDS-SF	.32[d]	.17[b]	.53[d]	−.36[d]	.40[d]	.64[d]	—			1.82	2.47	.77
BAI	.37[d]	.27[d]	.52[d]	−.23[c]	.62[d]	.57[d]	.47[d]	—		7.12	7.97	.90
STAI-S	.33[d]	.20[c]	.46[d]	−.45[d]	.59[d]	.56[d]	.52[d]	.56[d]	—	33.52	10.38	.90

[a]CCL-AH = Anxiety subscale of the Cognition Checklist (CCL); CCL-S = Social Loss subscale of the CCL; CCL-W = Worthlessness subscale of the CCL; PA-R = revised Positive Affect scale of the Positive and Negative Affect Schedule (PANAS); NA-R = revised Negative Affect scale of the PANAS; BDI = Beck Depression Inventory; GDS-SF = Geriatric Depression Scale—Short Form; BAI = Beck Anxiety Inventory; STAI-S = State subscale of the State-Trait Anxiety Inventory.

[b]$p < .05$.

[c]$p < .01$.

[d]$p < .001$.

and similar to that reported by Watson, Clark, and Tellegen (1988). Finally, positive and negative affectivity were mildly to moderately correlated with the measures of negative cognition (*r*s ranged from | .15| to | .39|).

Zero-Order Correlations

As a first test of the specificity hypotheses, the zero-order correlation between each of the three cognition scales and each symptom measure (anxiety and depression) was compared to its correlation with each other symptom measure by means of the *t*-statistic for dependent samples (see Table III). Inconsistent with findings from younger samples, the strength of the correlations between the three cognition measures and the anxiety symptom measures did not differ significantly from the correlations between the cognition measures and the depressive symptom measures. In other words, each of the three cognition scales was associated with symptoms of depression to the same degree that it was associated with symptoms of anxiety.[3]

Likewise, the correlation between each affect scale (NA-R and PA-R) and each symptom measure (anxiety and depression) was compared to its correlation with each other symptom measure by means of the *t*-test statistic for dependent samples (see Table III). The strength of the correlations between the affect scales and the anxiety measures did not differ significantly from the correlations between the affect scales and the depression measures. In other words, both NA-R and PA-R were

Table III. Tests of Differences Between Zero-Order Correlations[a]

Scale	CCL-AH	CCL-S	CCL-W	NA-R	PA-R
BDI	.41$_a$	.15$_a$	.54$_a$	.54$_a$	−.33$_{a,b}$
GDS-SF	.32$_a$	.17$_a$	.53$_a$	.39$_b$	−.36$_{a,b}$
BAI	.37$_a$	.27$_a$	.52$_a$	.65$_a$	−.25$_a$
STAI-S	.33$_a$	.20$_a$	.48$_a$	.60$_a$	−.47$_b$

[a]All correlations are significant at $p < .05$. Within each column, different subscripts indicate significant differences in the magnitude of correlations ($p < .05$). CCL-AH = Anxiety subscale of the Cognition Checklist (CCL); CCL-S = Social Loss subscale of the CCL; CCL-W = Worthlessness subscale of the CCL; NA-R = revised Negative Affect scale of the Positive and Negative Affect Schedule (PANAS); PA-R = revised Positive Affect scale of the PANAS; BDI = Beck Depression Inventory; GDS-SF = Geriatric Depression Scale—Short Form; BAI = Beck Anxiety Inventory; STAI-S = State subscale of the State-Trait Anxiety Inventory.

[3]Results were identical when these analyses were rerun controlling for either positive or negative affectivity.

correlated with symptoms of depression to the same extent that they were correlated with symptoms of anxiety.[4,5]

Partial Correlations

As a further test of specificity, the unique variance of each type of symptomatology was examined controlling for the opposite form of symptomatology (see Table IV). In other words, the unique variance in symptoms of depression was examined by statistically controlling for variance in symptoms of anxiety and, conversely, the unique variance in symptoms of anxiety was examined by statistically controlling for variance in symptoms of depression.

In terms of the cognitive variables, CCL-AH scores were found to be associated with the unique variance in symptoms of depression as measured by the BDI (but not the GDS-SF) *and* with the unique variance in symptoms of anxiety as measured

Table IV. Tests of Differences between Partial Correlations Controlling for Opposite-Symptom Measures[a]

Scale	CCL-AH	CCL-S	CCL-W	NA-R	PA-R
	Partial correlations controlling for anxiety				
BDI	.21[c]	−.02	.30[d]	.16[b]	−.10
GDS-SF	.13	.03	.33[d]	.01	−.17[b]
	Partial correlations controlling for depression				
BAI	.18[b]	.21[c]	.27[d]	.49[d]	−.05
STAI-S	.12	.12	.16[b]	.43[d]	−.32[d]

[a]Both measures reflecting opposite symptomatology are partialed out. CCL-AH = Anxiety subscale of the Cognition Checklist (CCL); CCL-S = Social Loss subscale of the CCL; CCL-W = Worthlessness subscale of the CCL; NA-R = revised Negative Affect scale of the Positive and Negative Affect Schedule (PANAS); PA-R = revised Positive Affect scale of the PANAS; BDI = Beck Depression Inventory; GDS-SF = Geriatric Depression Scale—Short Form; BAI = Beck Anxiety Inventory; STAI-S = State subscale of the State-Trait Anxiety Inventory.
[b]$p < .05$.
[c]$p < .01$.
[d]$p < .001$.

[4]Less theoretically relevant, the correlations between NA-R and the BAI ($r = .65$), $t(186) = 4.50$, $p < .001$, NA-R and the STAI-S ($r = .60$), $t(186) = 3.78$, $p < .001$, and NA-R and the BDI ($r = .54$), $t(186) = 2.86$, $p < .01$, were all significantly greater than the correlation between NA-R and the GDS-SF ($r = .39$). Also, the correlation between PA-R and the STAI-S ($r = -.47$) was significantly greater than the correlation between PA-R and the BAI ($r = -.25$), $t(186) = 3.52$, $p < .001$.

[5]Additional analyses were run in which the STAI-S was split into two scales, one that included only the positively valenced items (e.g., "I feel satisfied") and one that included only the negatively valenced items (e.g., "I am worried"). Both the positively worded ($r = -.42$) and negatively worded ($r = -.38$) subscales were moderately correlated with PA-R.

by the BAI (but not the STAI-S). Greater frequencies of negative health-related anxiety cognitions were associated with higher levels of depressive and anxious symptomatology on these instruments. CCL-S scores were related to the unique variance in symptoms of anxiety as measured by the BAI (but not the STAI-S), but were not associated with the unique variance in symptoms of depression as assessed by either the BDI or the GDS-SF. Greater frequency of social loss cognitions was related to higher levels of anxiety. Finally, after statistically controlling for the opposite form of symptomatology, the CCL-W was associated with unique variance in *both* symptoms of depression and anxiety across all four symptom measures. Greater frequency of worthlessness cognitions was related to higher levels of both depressive and anxious symptoms.

In terms of the dimensions of affectivity, NA-R was associated with the unique variance in both anxious and depressive symptoms. However, the associations between NA-R and unique variance in symptoms of anxiety (as measured by both the BAI and STAI-S) were moderate to strong in magnitude, whereas the associations between NA-R and unique variance in symptoms of depression were weak (in the case of the BDI) or nonsignificant (in the case of the GDS-SF). PA-R was negatively associated with the unique variance in depressive symptoms as measured by the GDS-SF (but not the BDI), but it also was negatively associated with the unique variance in symptoms of anxiety as measured by the STAI-S (but not the BAI).

Regression Analyses

As a final test of specificity, hierarchical multiple-regression analyses were conducted to determine the degree to which each of the CCL and PANAS subscales made unique contributions to the prediction of symptoms of anxiety and depression, above that of the opposite form of symptomatology (see Table V). Regression analyses were conducted separately on each of the four symptom measures (i.e., BDI, GDS-SF, BAI, and STAI-S). In each of these analyses, we used one of the four symptom measures as the criterion variable and entered the two opposite symptom measures at Step 1. The measures reflecting the opposite form of symptomatology were entered first in order to statistically control for their high level of shared variance with the criterion variable. At Step 2, NA-R, PA-R, CCL-AH, CCL-S, and CCL-W were entered simultaneously as a block. This analysis provides an estimate of the unique contribution of each cognitive and affective dimension in the prediction of variance specific to either depressive or anxious symptomatology. The magnitudes of these effects are reported as standardized betas (βs) and partial correlations (*pr*s).

In the first two analyses, the criterion variables were symptoms of depression as measured by the BDI (in the first analysis) and by the GDS-SF (in the second analysis). In both analyses, the BAI and STAI-S made significant contributions to the prediction of depressive symptoms. The addition of the PANAS and CCL scales into the equation accounted for an additional 9% of the variance above and beyond the effects of symptoms of anxiety. After controlling for all other variables in the equation, NA-R, CCL-AH, CCL-S, and CCL-W were found to be significant predictors of BDI scores. Higher levels of NA-R, CCL-AH, and CCL-W, but lower

Table V. Hierarchical Multiple Regression Analyses Predicting Symptoms of Anxiety and Depression[a]

Predictor	β	*pr*	*t*	Step R^2 change
Beck Depression Inventory				
Step 1				.41[c]
BAI	.37	.30	5.41[c]	
STAI-S	.35	.29	5.21[c]	
Step 2				.09[c]
NA-R	.16	.11	2.06[b]	
PA-R	−.07	−.06	−1.09	
CCL-AH	.12	.11	2.00[b]	
CCL-S	−.12	−.11	−2.08[b]	
CCL-W	.27	.21	4.02[c]	
Model R^2 = .50, $F(7, 181)$ = 25.69, $p < .001$				
Geriatric Depression Scale—Short Form				
Step 1				.32[c]
BAI	.26	.21	3.54[c]	
STAI-S	.37	.31	5.17[c]	
Step 2				.09[c]
NA-R	−.01	−.01	−0.11	
PA-R	−.13	−.11	−1.98[b]	
CCL-AH	.04	.03	0.56	
CCL-S	−.08	−.07	−1.21	
CCL-W	.33	.25	4.40[c]	
Model R^2 = .41, $F(7, 181)$ = 17.80, $p < .001$				
Beck Anxiety Inventory				
Step 1				.34[c]
BDI	.65	.37	5.81[c]	
GDS-SF	.18	.14	2.32[b]	
Step 2				.20[c]
NA-R	.44	.36	7.18[c]	
PA-R	.01	.01	0.22	
CCL-AH	.03	.02	0.43	
CCL-S	.09	.08	1.60	
CCL-W	.17	.13	2.47[b]	
Model R^2 = .54, $F(7, 181)$ = 29.80, $p < .001$				
State-Trait Anxiety Inventory—State Scale				
Step 1				.36[c]
BDI	.38	.29	5.02[c]	
GDS-SF	.28	.21	3.62[c]	
Step 2				.18[c]
NA-R	.37	.31	6.11[c]	
PA-R	−.27	−.22	−4.44[c]	
CCL-AH	−.01	−.01	−0.14	

Table V. Continued

Predictor	β	*pr*	*t*	Step R^2 change
CCL-S	.03	.02	0.48	
CCL-W	.08	.06	1.15	
Model R^2 = .54, $F(7, 181)$ = 29.82, p < .001				

[a]BAI = Beck Anxiety Inventory; STAI-S = State subscale of the State-Trait Anxiety Inventory; BDI = Beck Depression Inventory; GDS-SF = Geriatric Depression Scale—Short Form; NA-R = revised Negative Affect scale of the Positive and Negative Affect Schedule (PANAS); PA-R = revised Positive Affect scale of the PANAS; CCL-AH = Anxiety subscale of the Cognition Checklist (CCL); CCL-S = Social Loss subscale of the CCL; CCL-W = Worthlessness subscale of the CCL. β = standardized beta weight; *pr* = partial correlation.
[b]p < .05.
[c]p < .001.

levels of CCL-S, were associated with greater depressive symptomatology. In contrast, only PA-R and CCL-W made significant unique contributions to the prediction of GDS-SF scores. Higher levels of CCL-W were associated with higher levels of depressive symptomatology, whereas lower levels of PA-R were associated with higher levels of depressive symptomatology.

In the second two analyses, the criterion variables were symptoms of anxiety as measured by the BAI (in the third analysis) and by the STAI-S (in the fourth analysis). In both analyses, the BDI and GDS-SF made significant contributions to the prediction of anxious symptoms. The addition of the PANAS and CCL scales into the equation accounted for an additional 20% and 18% of the variance above and beyond the effects of symptoms of depression, respectively. After controlling for all other variables in the equation, NA-R and CCL-W were found to be significant predictors of BAI scores. Higher levels of NA-R and CCL-W were associated with greater anxious symptomatology. In contrast, NA-R and PA-R made significant contributions to the prediction of STAI-S scores. Higher levels of NA-R were associated with greater anxious symptomatology, whereas *lower* levels of PA-R were associated with greater anxious symptomatology.[6]

DISCUSSION

The present investigation examined whether particular types of cognitions and affective states are useful in differentiating symptoms of anxiety and depression in

[6]All analyses, including both the regression analyses and the correlations, were rerun controlling for health. This was to ensure that scores on measures were not being inflated because participants were endorsing symptoms due to physical illness. The Medical Outcome Scale (MOS) Short-Form (Stewart, Hays, & Ware, 1988) was used to measure physical functioning, pain, and health perceptions. After controlling for health in the regression analyses, the CCL-AH and CCL-S scales no longer made significant unique contributions to the prediction of BDI scores. Otherwise, the results were largely identical to those reported above.

community-dwelling older adults, as they have been found to be in younger adults. These issues are important given evidence that symptomatology of late-life depression and anxiety might be phenomenologically distinct from that occurring in younger adults. Although measures of depression and anxiety were moderately correlated in our sample as they are in younger adults, the results from the present study suggest that the cognitive and affective underpinnings of depression and anxiety are different in the elderly. Furthermore, the present findings suggest that the cognitive and affective dimensions that are important in distinguishing depression and anxiety among younger samples are not as useful among the elderly. There was little evidence of distinct cognitive or affective profiles that could differentiate symptoms of anxiety or depression among our elderly participants.

In terms of the cognitive dimensions, confirmatory factor analysis indicated that the two-factor model of depressive and anxiety cognitions established in younger samples (Beck et al., 1987; Steer et al., 1994) provided an inadequate fit to the data. Instead, three factors emerged from the CCL in an exploratory factor analysis. Although the first factor contained only items from Beck et al.'s (1987) original Anxious Cognition subscale, the Depressive Cognition subscale split into two separate scales reflecting social loss and negative self-evaluation/worthlessness cognitions. Apparently, the elderly tend to make finer grained distinctions among negative cognitions than younger persons do. In other words, younger persons tend to experience these depressed cognitions as a single cluster, whereas our elderly participants reported experiencing more homogenous "subclusters" of negative cognitions.

Perhaps of even greater importance, contrary to what has been found in younger adults, these cognitive dimensions were *not* specifically related to anxious and depressive symptoms in community elders. First, whereas scores on the CCL's Anxiety subscale have been shown to be specifically predictive of anxious symptoms in younger adults, the Anxiety subscale (CCL-AH) in the current study was related to both anxious *and* depressive symptoms. Zero-order correlations between this scale and symptoms of anxiety and depression did not differ in magnitude. Furthermore, when anxious symptomatology was statistically controlled in partial correlations, the CCL-AH was associated with BDI scores and, conversely, when depressive symptomatology was controlled, the CCL-AH was associated with BAI scores. In further contrast to the findings in younger adults, regression analyses revealed that, when all other cognitive and affective variables were controlled, anxious cognitions only were predictive of *depressive* symptoms as measured by the BDI.

Second, social loss cognitions generally were not related to anxious or depressive symptoms. Zero-order correlations found that these cognitions were only weakly associated with symptomatology. Furthermore, after statistically controlling for anxious symptomatology in partial correlations, these cognitions were not significantly related to either of our two measures of depressive symptoms. Although social loss cognitions were related to anxious symptoms as measured by the BAI after controlling for depressive symptoms, when all other cognitive and affective variables were controlled in the regression analysis, this association became nonsignificant. This finding suggests that the association between social loss cognitions

and symptomatology among the elderly is the result of shared variance with other cognitions or affective states rather than social loss cognitions per se. Finally, negative self-evaluation/worthlessness cognitions were strongly related to symptoms of both anxiety and depression even after controlling for the opposite form of symptomatology in partial correlations. Furthermore, these cognitions were predictive of both anxious and depressive symptoms as measured by three of our four measures (with the exception of the STAI-S), after controlling for all cognitive and affective variables.

By definition, anxious cognitions consist of automatic thoughts regarding personal and/or physical danger (e.g., "What if I get sick and become an invalid?" or "I am going to be injured"; Beck et al., 1987). However, in older adults, who are more likely to suffer from physical ailments, these cognitions might reflect current poor physical health rather than cognitive distortions. Because health problems have been repeatedly correlated with depressive symptoms in elderly samples (Blazer, 1989; Pfifer & Murrell, 1986; Smith, Colenda, & Espeland, 1994), the association between "anxious" cognitions and depressive symptoms in our elderly sample might have been due to a third variable—namely, poor health. Consistent with this explanation, when health/physical functioning was statistically controlled, the Anxiety Cognition scale was no longer predictive of depressive symptoms (see footnote 6).

The fact that social loss cognitions were only weakly predictive of symptoms of anxiety and depression is somewhat surprising considering that the items on the scale (e.g., "No one cares whether I live or die" and "There's no one left to help me") seem to be particularly relevant during older adulthood. In general, older adults go through multiple changes in social roles (e.g., retirement, loss of a spouse). However, despite these changes, rates of depression remain relatively low compared to those of younger adults (Regier et al., 1988). The fact that these types of loss experiences are normative in the elderly suggests that it is possible that changes in social role do not adversely affect psychological well-being in the elderly. Thus, it appears that cognitions pertaining to social role issues do not contribute to emotional distress in the elderly, and therefore are not useful in differentiating symptoms of anxiety and depression.

Finally, negative self-evaluation/worthlessness cognitions were robustly associated with scores on nearly all measures of emotional distress, even after statistically controlling for the other measures of cognition and affect.[7] Thus, negative self-evaluation/worthlessness cognitions appear to be an important characteristic of general psychological distress in the elderly, particularly relative to the other cognitive dimensions examined in the present research. These findings contrast with research on college-age persons that has found that self-esteem issues (particularly temporal variability in self-esteem) are specifically associated with vulnerability to depressive symptoms as compared to anxiety (Roberts & Gotlib, 1997). It would be important

[7]CCL-W was not significantly predictive of STAI-S scores in the regression analyses. Most likely, CCL-W was not as strong a predictor of anxiety symptoms (when compared to depressive symptoms) because of the significant overlap between NA-R and anxiety. That is, because the revised NA scale consisted primarily of anxiety items (as will be discussed), NA-R accounted for a substantial portion of the variance in anxious symptomatology and left little variance to be explained by the other cognitive and affective variables.

for future research to investigate the extent to which these negative self-evaluation/worthlessness cognitions play a role in vulnerability to emotional distress and symptomatology among the elderly using prospective designs.

In terms of the affective components of late-life anxiety and depression, results were partially consistent with findings from younger samples. Exploratory factor analysis of the PANAS revealed a two-factor solution that was identical in item composition to that found by Watson, Clark, and Tellegen (1988). After several items that had relatively small factor loadings (i.e., less than .50) were eliminated from the scales, confirmatory factor analysis indicated that the two-factor solution provided a good fit to the data. However, the six remaining items on the NA-R scale predominantly reflected anxiety ("nervous," "jittery," "afraid," "scared," "distressed," and "irritable"). Items reflecting content other than anxiety ("upset," "ashamed," "hostile," and "guilty") failed to cohere on this factor in the same manner that they tend to in younger samples. Similar to our findings with the CCL, it appears that elderly individuals tend to make finer distinctions among their negative affective states than younger persons seem to do.

Overall, the affectivity scales failed to demonstrate the type of specificity frequently found in samples of younger persons. Although the zero-order correlations indicated that negative affectivity was related to both depressive and anxious symptoms, findings were somewhat different when the unique variance in depression and anxiety were examined in partial correlation and regression analyses. In these analyses, the associations between variance in NA and variance that was unique to anxiety were moderate to strong in magnitude, whereas the associations between variance in NA and variance that was unique to depression were weak or nonsignificant depending on the particular measure. However, the implications of these findings are difficult to determine because the NA-R scale largely contained items reflecting anxious content.

In contrast to findings with younger persons, positive affectivity was not specifically associated with depressive symptoms. First, zero-order correlations between PA and symptoms of depression were not larger in magnitude than those between PA and symptoms of anxiety. Furthermore, partial correlation and regression analyses revealed that PA was negatively associated with depressive symptoms as measured by the GDS-SF (but not the BDI), but that it was also negatively associated with anxiety symptoms as measured by the State subscale of the STAI (but not the BAI).[8] These results are interesting given that older adults with higher levels of depressive symptoms may be less likely than similarly depressed younger adults to endorse feelings of dysphoria (e.g., Gallo et al., 1994). As previously discussed, low PA is best defined by descriptors reflecting fatigue (e.g., "sleepy" and "sluggish") and depression (e.g., "sad" and "depressed"; Watson & Kendall, 1989), suggesting that PA and feelings of dysphoria share considerable variance. Perhaps then, the older adults in the present sample who were experiencing other depressive symptoms did not report either dysphoria or low PA, thereby making it difficult to dif-

[8]Discrepancies between the STAI-S and BAI might be due to differences in item content—the majority of the items on the BAI reflect somatic symptoms of anxiety, whereas all of the items on the STAI-S reflect cognitive and affective symptoms of anxiety. In fact, Cox, Cohen, Direnfeld, and Swinson (1996) have found evidence that the BAI may be a better measure of panic than of general anxiety.

ferentiate symptoms of depression from anxiety based on PA scores. It is also possible that the nature of positive affectivity is different in the elderly. For example, Lawton et al. (1993) found that arousal is a less important component of PA in the elderly compared to younger adults.

It also is important to note that, in their earlier work, Watson, Clark, and Tellegen (1988) found nearly identical correlations between PA and scores on the State subscale of the STAI (−.35), and PA and scores on the BDI (−.36), in college students. They argued that PA was related to state anxiety (and not specific to depression), in this case, because half of the STAI-S items are "reverse-keyed . . . reflecting pleasant or high PA states" (e.g., feeling joyful, pleasant, or self-confident, p. 1068). However, as noted in footnote 5, in the present data, the negatively valenced STAI-S items also were associated with PA. Finally, relatively low discriminant validity of the STAI recently has been found in other studies (e.g., Creamer, Foran, & Bell, 1995; Fydrich, Dowdall, & Chambless, 1992), especially when compared to the BAI.

Before definitive conclusions can be made, our results need to be replicated with designs that address the limitations of the present study. The sample in this study was limited to community older adults who were primarily recruited at active senior centers. It is possible that the underlying structures of late-life anxiety and depression may differ in elderly persons who have sought treatment for depression or anxiety disorders as compared to our relatively asymptomatic sample who had a relatively restricted range of scores. These structures might even prove to differ in a sample of community adults who are less socially active and have less social support than our relatively active and socially engaged participants. Also, all of the measures employed in this study were self-report questionnaires. As has been widely acknowledged, self-report measures are limited in that they assume individuals can accurately report thoughts, emotions, and behaviors, and that individuals are willing to report socially undesirable behavior. With regard to the present study, the ability of participants to accurately report automatic thoughts, in particular, seems problematic because, by definition, these cognitions are short-lived and involuntary. Also, the fact that individuals often respond to self-report measures in a socially desirable way is compounded by the fact that measures were completed in large groups, which might further influence self-disclosure (Weisband & Kiesler, 1996). We also should note that cognitive items that are less directly tied to health issues, social loss, and self-esteem might result in greater specificity. Future research needs to be conducted to examine the types of cognitions and affective states that are uniquely associated with late-life depression and anxiety.

In summary, the results of the present study suggest that the cognitive and affective underpinnings of depression and anxiety are different in older adults as compared to younger adults. In contrast to the two-factor structure that has been found in younger adults, negative automatic cognitions in the elderly were composed of three factors: anxious, social loss, and worthlessness cognitions. In general, these cognitions were not specifically related to anxious or depressive symptoms. Furthermore, although negative affectivity was related to both depression and anxiety, as in younger samples, positive affectivity generally was not useful in differentiating depressive from anxious symptoms. Because it is evident that the cognitions

and affective states that have been used to differentiate anxiety from depression in younger adults are not useful in older adults, future research needs to focus on elucidating the characteristics that are specific to anxiety and depression in older adults. In a time in which people are living longer and the older adult population is growing, the understanding of emotional distress in the elderly is of paramount importance.

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REFERENCES

Ambrose, B., & Rholes, W. S. (1993). Automatic cognitions and the symptoms of depression and anxiety in children and adolescents: An examination of the content-specificity hypothesis. *Cognitive Therapy and Research, 17*, 153-171.

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.). Washington, DC: Author.

Arean, P. A., & Miranda, J. (1992, October). *Differential item functioning of CES-D items in older versus younger medical patients*. Paper presented at the Sixth Annual NIMH International Research Conference on Primary Care Mental Health Research: Concepts, Methods, and Obstacles, Bethesda, MD.

Beck, A. (1976). *Cognitive therapy and the emotional disorders*. New York: New American Library.

Beck, A. T., Brown, G., Steer, R. A., Eidelson, J. I., & Riskind, J. H. (1987). Differentiating anxiety and depression: A test of the cognitive content-specificity hypothesis. *Journal of Abnormal Psychology, 96,* 179-183.

Beck, A. T., & Emery, G. (1985). *Anxiety disorders and phobias: A cognitive perspective.* New York: Basic Books.

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 55,* 893-897.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression.* New York: Guilford Press.

Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8,* 77-100.

Beck, J. G., Stanley, M. A., & Zebb, B. J. (1996). Characteristics of generalized anxiety disorder in older adults: A descriptive study. *Behavior Research Therapy, 34*, 225-234.

Blazer, D. G. (1989). Affective disorders in late-life. In E. W. Busse & D. G. Blazer (Eds.), *Geriatric psychiatry* (pp. 369-401). Washington D.C.: American Psychiatric Press.

Blazer, D. G. (1993). *Depression in late life* (2nd ed.). St. Louis: Mosby—Year Book.

Blazer, D., Bachar, J. R., & Hughes, D. C. (1987). Major depression with melancholia: A comparison of middle-aged and elderly adults. *Journal of the American Geriatrics Society, 35*, 927-932.

Blazer, D., George, L. K., & Hughes, D. (1991). The epidemiology of anxiety disorders: An age comparison. In C. Salzman & B. D. Lebowitz (Eds.), *Anxiety in the elderly* (pp. 17-30). New York: Springer.

Blazer, D., George, L., & Landerman, R. (1986). The phenomenology of late-life depression. In P. E. Bebbington & R. Jacoby (Eds.), *Psychiatric disorders in the elderly* (pp. 143-151). London, England: Mental Health Foundation.

Brodaty, H., Peters, K., Boyce, P., Hickie, I., Parker, G., Mitchell, P., & Wilhelm, K. (1991). Age and depression. *Journal of Affective Disorders, 23*, 137-149.

Busse, E. (1975). Aging and psychiatric diseases in late-life. In M. Reiser (Ed.), *American handbook of psychiatry, 4*. New York: Basic Books.

Clark, D. A. (1986). Cognitive-affective interaction: A test of the "specificity" and "generality" hypotheses. *Cognitive Therapy and Research, 10,* 607-623.

Clark, D. A., Beck, A. T., & Brown, G. (1989). Cognitive mediation in general psychiatric outpatients: A test of the content-specificity hypothesis. *Journal of Personality and Social Psychology, 56*, 958-964.

Clark, D. A., Beck, A. T., & Stewart, B. (1990). Cognitive specificity and positive-negative affectivity: Complementary or contradictory views on anxiety and depression? *Journal of Abnormal Psychology, 99*, 148-155.

Clark, D. A., Steer, R. A., & Beck, A. T. (1994). Common and specific dimensions of self-reported anxiety and depression: Implications for the cognitive and tripartite models. *Journal of Abnormal Psychology, 103*, 645-654.

Clark, L. A. (1989). The anxiety and depressive disorders: Descriptive psychopathology and differential diagnosis. In P. C. Kendall & D. Watson (Eds.), *Anxiety and depression: Distinctive and overlaping features* (pp. 83-129). San Diego: Academic Press.

Cox, B. J., Cohen, E., Direnfeld, D. M., & Swinson, R. P. (1996). Does the Beck Anxiety Inventory measure anything beyond panic attack symptoms? *Behaviour Research and Therapy, 34*, 949-954.

Craig, T. J., & Van Natta, P. A. (1979). Influence of demographic characteristics on two measures of depressive symptoms: The relation of prevalence and persistence of symptoms with sex, age, education, and marital status. *Archives of General Psychiatry, 36*, 149-154.

Creamer, M., Foran, J., & Bell, R. (1995). The Beck Anxiety Inventory in a non-clinical sample. *Behaviour Research and Therapy, 33,* 477-485.

Dobson, K. S. (1985). The relationship between anxiety and depression. *Clinical Psychology Review 5*, 307-324.

Fydrich, T., Dowdall, D., & Chambless, D. L. (1992). Reliability and validity of the Beck Anxiety Inventory. *Journal of Anxiety Disorder 6*, 55-61.

Gallagher, D., Nies, G., & Thompson, L. W. (1982). Reliability of the Beck Depression Inventory with older adults. *Journal of Consulting and Clinical Psychology, 50*, 152-153.

Gallo, J. J., Anthony, J. C., & Muthen, B. O. (1994). Age differences in the symptoms of depression: A latent trait analysis. *Journal of Gerontology, 49*, 251-264.

Goldfarb, A. I. (1974). Masked depression in the elderly. In Lesse (Ed.), *Masked depression* (pp. 236-249). New York: Jason Aronson.

Gurian, B. S., & Miner, J. H. (1991). Clinical presentation of anxiety in the elderly. In C. Salzman & B. D. Lebowitz (Eds.), *Anxiety in the elderly* (pp. 31-44). New York: Springer.

Harrell, T. H., Chambless, D. L., & Calhoun, J. F. (1981). Correlational relationships between self-statements and affective states. *Cognitive Therapy and Research, 5*, 159-173.

Ingram, R. E., Kendall, P. C., Smith, T. W., Donnell, C., & Ronan, K. (1987). Cognitive specificity in emotional distress. *Journal of Personality and Social Psychology, 53*, 734-742.

Jolly, J. B., Dyck, M., Kramer, T. A., & Wherry, J. N. (1994). Integration of positive and negative affectivity and cognitive content-specificity: Improved discrimination of anxious and depressive symptoms. *Journal of Abnormal Psychology, 103*, 544-552.

Jöreskog, K. G., & Sörbom, D. (1996). *Lisrel 8.14: User's reference guide*. Chicago: Scientific Software International.

Lader, M. (1982). Differential diagnosis of anxiety in the elderly. *Journal of Clinical Psychiatry, 43*, 4-7.

Lawton, M. P., Kleban, M. H., & Dean, J. (1993). Affect and age: Cross-sectional comparisons of structure and prevalence. *Psychology and Aging, 8*, 165-175.

Lesher, E. L., & Berryhill, J. S. (1994). Validation of the Geriatric Depression Scale—Short Form among inpatients. *Journal of Clinical Psychology, 50*, 256-260.

Morin, C. M., Stone, J., Ling, W., & Trinkle, D. (1994, November). *The Beck Anxiety Inventory: Psychometric properties with older adults*. Poster session presented at the annual meeting of the Association for the Advancement of Behavior Therapy, San Diego, CA.

Musetti, L., Perugi, G., Soriani, A., Rossi, V. M., Cassano, G. B., & Akiskal, H. S. (1989). Depression before and after age 65: A re-examination. *British Journal of Psychiatry, 155,* 330-336.

Olin, J. T., Schneider, L. S., Eaton, E. M., Zemansky, M. F., & Pollock, V. E. (1992). The Geriatric Depression Scale and the Beck Depression Inventory as screening instruments in an older adult outpatient population. *Psychological Assessment, 4*, 190-192.

Patterson, R. L., O'Sullivan, M. J., & Spielberger, C. D. (1980). Measurement of state and trait anxiety in elderly mental health clients. *Journal of Behavioral Assessment, 2*, 89-97.

Pfeiffer, E. (1979). Interviewing the anxious patient. In *Diagnosis and treatment of anxiety in the elderly, part II* (pp. 23-33). Nutley, NJ: Hoffman-La Roche.

Pfifer, J. F., & Murrell, S. A. (1986). Etiologic factors in the onset of depressive symptoms in older adults. *Journal of Abnormal Psychology, 95*, 282-291.

Regier, D. A., Boyd, J. H., Burke, Jr., J. D., Rae, D. S., Myers, J. K., Kramer, M., Robins, L. N., George, L. K, Karno, M., & Locke, B. Z. (1988). One-month prevalence of mental disorders in the United States, based on five epidemiologic catchment area sites. *Archives of General Psychiatry, 45*, 977-986.

Roberts, J. E., & Gotlib, I. H. (1997). Temporal variability in global self-esteem and specific self-evaluation as prospective predictors of emotional distress: Specificity in predictors and outcome. *Journal of Abnormal Psychology*, *106*, 521-529.

Salzman, C. (1982). A primer on geriatric psychopharmacology. *American Journal of Psychiatry, 139*, 67-74.

Shamoian, C. A. (1991). What is anxiety in the elderly? In C. Salzman & B. D. Lebowitz (Eds.), *Anxiety in the elderly* (pp. 3-15). New York: Springer.

Sheikh, J. I. & Yesavage, J. A. (1986). Geriatric Depression Scale (GDS): Recent evidence and development of a shorter version. *Clinical Gerontologist, 5,* 165-173.

Smith, S. L., Colenda, C. C., & Espeland, M. A. (1994). Factors determining the level of anxiety state in geriatric primary care patients in a community dwelling. *Psychosomatics, 35*, 50-58.

Spielberger, C., Gorsuch, R., & Lushene, R. (1970). *STAI manual for the State-Trait Anxiety Inventory.* Palo Alto, CA: Consulting Psychologists Press.

Stavrakaki, C., & Vargo, B. (1986). The relationship of anxiety and depression: A review of the literature. *British Journal of Psychiatry, 149*, 7-16.

Steer, R. A., Beck, A. T., Clark, D. A., & Beck. J. S. (1994). Psychometric properties of the cognition checklist with psychiatric outpatients and university students. *Clinical Assessment,* 6, 67-70.

Steer, R. A., Clark, D. A., Beck, A. T., & Ranieri, W. F. (1995). Common and specific dimensions of self-reported anxiety and depression: A replication. *Journal of Abnormal Psychology, 104*, 542-545.

Stewart, A. L., Hays, R. D., & Ware, J. E. (1988). The MOS short-form general health survey. *Medical Care, 26*, 724-735.

Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In A. H. Tuma & J. D. Maser (Eds.), *Anxiety and the anxiety disorders*. (pp. 681-706). Hillsdale, NJ: Erlbaum.

Thorpe, G. L., Barnes, G. S., Hunter, J. E., & Hines, D. (1983). Thoughts and feelings: Correlations in two clinical and two nonclinical samples. *Cognitive Therapy and Research, 7*, 565-574.

Watson, D., Clark, L. A., & Carey, G. (1988). Positive and negative affectivity and their relation to anxiety and depressive disorders. *Journal of Abnormal Psychology, 97,* 346-353.

Watson, D., Clark, L. A., & Tellegen, A. (1984). Cross-cultural convergence in the structure of mood: A Japanese replication and comparison with U. S. findings. *Journal of Personality and Social Psychology, 47*, 127-144.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063-1070.

Watson, D., & Kendall, P. C. (1989). Understanding anxiety and depression: Their relation to negative and positive affective states. In P. C. Kendall & D. Watson (Eds.), *Anxiety and depression: Distinctive and overlapping features* (pp. 3-26). San Diego: Academic Press.

Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin, 98*, 219-235.

Weisband, S., & Kiesler, S. (1996). *Self-disclosure on computer forms: Meta-analysis and implications* (Proceedings of CHI '96, ACM SIGCHI) New York: Association for Computing Machinery.

Weissman, M. M., Myers, J. K., Tischler, G. L., Holzer, C. E., Leaf, P. J., Orvaschel, H., & Brody, J. A. (1985). Psychiatric disorders (DSM-III) and cognitive impairment among the elderly in a U.S. urban community. *Acta Psychiatrica Scandinavica, 71*, 366-379.

Yesavage, J. A., Brink, T. L., Rose, T. L., Lum, O., Huang, V., Adey, M. B., & Leirer, V. O. (1983). Development and validation of a geriatric depression screening scale: A preliminary report. *Journal of Psychiatric Research, 22*, 37-49.