Psychometric Properties of the Beck Depression Inventory–II (BDI-II) Among Community-Dwelling Older Adults

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The psychometric properties of the Beck Depression Inventory–II (BDI-II) as a self-administered screening tool for depressive symptoms were examined in a sample of community-dwelling older and younger adults. Participants completed the BDI-II, the Center for Epidemiologic Studies Depression Scale, the Coolidge Axis II Inventory, the Perceived Stress Scale, and the Short Psychological Well-Being Scale. Internal reliability of the BDI-II was found to be good among older and younger adults. The average BDI-II depression score did not differ between younger and older adults. Solid evidence for convergent and discriminant validity was demonstrated by correlations between the BDI-II with the other measures. The BDI-II appears to have strong psychometric support as a screening measure for depression among older adults in the general population. Implications for using the BDI-II as an assessment instrument in behaviorally based psychotherapy are discussed.

Keywords: depression; screening; assessment; elderly; validity

The Beck Depression Inventory–II (BDI-II; Beck, Steer, & Brown, 1996) is an immensely popular screening instrument for depression among adults and adolescents. It is designed for use among individuals 13 years old and older. The BDI-II is a substantially revised and upgraded version of the original Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Notably, concerns were raised about whether the original BDI was appropriate and valid for use with older

adults because the BDI included many somatic items that may result in artificially elevated depression scores in physically ill (but not depressed) older adults and because the response format was not simple or easily comprehended (see Gallagher, 1986). Studies of the psychometric properties of the original BDI among older adults resulted in a mixed picture regarding the instrument's utility, with most evidence in support of the measure but some evidence against the measure (e.g., Allen-Burge, Storandt, Kinscherf, & Rubin, 1994; Cappeliez, 1989; Hyer & Blount, 1984; Kogan, Kabacoff, Hersen, & Van Hasselt, 1994; Olin, Schneider, Eaton, Zemansky, & Pollock, 1992; Scogin, Beutler, Corbishley, & Hamblin, 1988).

In an attempt to make the BDI-II a more valid measure of depression in older adults, older adults were included in the outpatient sample used to assess the psychometric properties of the measure (Beck et al., 1996). During the revision process, several response options also were reworded for clarity and many items were revised or newly created so the assessed symptoms would be more consonant with the official diagnostic criteria for depression according to the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association, 1994). Although including older adults in the new normative sample was a step in the right direction, simply including this population in a normative sample did not provide evidence of validity for the new measure with older adult respondents.

It is especially important to screen for depressive symptoms among the older adult population due to the ubiquitous nature of mood problems. Specifically, although rates of diagnosable depression are relatively low among community-dwelling older adults, rates of subsyndromal but clinically significant levels of depressive symptoms are high and estimated to be experienced by about 15% to 25% of all older adults (Jeste et al., 1999). Significant depressive symptoms in later life are associated with a host of negative outcomes, including decreased social functioning and quality of life and increased physical disability, cognitive impairment, and suicide (see Zarit & Zarit, 2007). Therefore, it is highly important to detect depression in later life and to initiate appropriate treatments. Notably, the thorough and objective assessment of clients is a hallmark feature of the behavioral and cognitive-behavioral psychotherapies (see Hersen, 2006); the BDI-II would be a valuable assessment tool for use with older adults if the measure is known to have strong psychometric properties.

Since the publication of the BDI-II, a sparse literature exists regarding its reliability, validity, and utility specifically among older adults. Jefferson,

Powers, and Pope (2000), using a sample of 64 older women recruited from independent living facilities, reported that the BDI-II had good internal consistency (α = .85) and was highly correlated (r = .71) with the Geriatric Depression Scale (GDS; Yesavage et al., 1983), which is a well-validated measure of depression specifically developed for use with older adults. In a larger study of older adult psychiatric inpatients who were diagnosed with either major depressive disorders (N = 85) or adjustment disorders with depressed mood (N = 45), Steer, Rissmiller, and Beck (2000) reported that the BDI-II had good internal consistency (α = .90) and that the total score was not significantly correlated with gender, age, or ethnicity of the patients. Steer et al. also found through factor analysis a two-factor solution for the BDI-II, replicating the same dimensions reported among a younger sample of clinically depressed outpatients (Steer, Ball, Ranieri, & Beck, 1999). The primary purpose of the present study was to examine the psychometric properties of the BDI-II among community-dwelling older men and women. Specifically, we wanted to examine the internal reliability, convergent validity, discriminant validity, and factorial validity of the measure.

Method

Participants and Procedure

The full sample consisted of 376 community-dwelling adults (M age = 39.4 years, SD = 25.3 years; age range = 17-90 years; M years of education = 13.5, SD = 2.4). Their ethnicity consisted of 84% Caucasian, 7% Hispanic, 2% African American, 2% Asian, less than 1% American Indian, and 3% Other. Their marital status was 58% never married, 22% married, 13% widowed, 7% divorced, and less than 1% separated. To assess the effects of age, the sample was divided into a young adult group (N = 229; M age = 19.6 years; age range = 17-29 years) and an older adult group (N = 147; M age = 70.3 years; age range = 55-90 years). See Table 1 for complete demographic information for the young and older adult groups.

The younger adults were undergraduate students who were recruited from psychology classes. They received extra credit for their participation or for their recruitment of older adult family members. Older adults also were recruited through senior centers and newspaper advertisements. Participants completed anonymously the questionnaire packet and were debriefed afterward in writing.

Table 1
Group Demographics

	Young Adults (%, N = 229)	Older Adults (%, N =147)
Ethnicity		
Caucasian	77.3	96.6
African American	3.1	0.7
Hispanic	11.4	0.0
Asian	3.5	0.7
American Indian	0.4	0.0
Other	4.4	2.0
Marital status		
Never married	93.9	2.0
Married	5.7	46.3
Divorced	0.4	17.7
Widowed	0.0	32.0
Separated	0.0	2.0
Mean years of education	12.6 (SD = 1.0)	14.8 (SD = 3.1)
Gender		
Male	36	42
Female	64	58
Mean age in years	19.6 (SD = 2.2)	70.3 (SD = 7.5)

Measures

BDI-II. The BDI-II (Beck et al., 1996) is a 21-item self-report depression screening measure. Each item is rated on a 4-point Likert-type scale ranging from 0 to 3, with higher scores indicating higher levels of depression. The measures asks respondents to endorse statements characterizing how they have been feeling throughout the past 2 weeks. The maximum total score for all 21 items is 63. According to the BDI-II manual, scores of 0 to 13 denote minimal depression, scores of 14 to 19 denote mild depression, scores of 20 to 28 denote moderate depression, and scores of 29 to 63 denote severe depression.

Center for Epidemiologic Studies Depression Scale (CES-D). The CES-D (Radloff, 1977) is a 20-item self-report measure of depressive severity developed for the screening of mood problems in the general population. The measure asks respondents to indicate how often they had felt each way during the past 2 weeks, with each item rated on a 4-point Likert-type scale ranging from 0 (*rarely/none*) to 3 (*most of the time*). Traditionally, a total

score is calculated by adding the ratings for all items. The possible range of total scores is from 0 to 60, with higher scores reflecting greater levels of depression. The CES-D has been found to have excellent psychometric properties among diverse adults (e.g., Mulrow, Williams, & Gerety, 1995; Radloff, 1977) and older adults (e.g., Hertzog, Van Alstine, Usala, Hultsch, & Dixon, 1990; Himmelfarb & Murrell, 1983; Lewinsohn, Seeley, Roberts, & Allen, 1997). In the present sample, internal consistency of the CES-D was excellent ($\alpha = .92$).

Coolidge Axis II Inventory (CATI). The CATI (Coolidge, 2004; Coolidge & Merwin, 1992) is a 225-item self-report inventory designed to measure personality disorder features and clinical syndromes according to the text revision of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000). The CATI uses a 4-point Likert-type scale and has ample evidence of reliability and validity (Coolidge, 2004), including utility with older adults (e.g., Coolidge, Segal, Hook, & Stewart, 2000; Coolidge, Segal, Pointer, et al., 2000; Segal, Hook, & Coolidge, 2001). For this study, only the Depression subscale, Anxiety subscale, and Depressive Personality Disorder subscale were used, each with acceptable levels of internal consistency in this sample (αs = .89, .74, and .75, respectively).

Perceived Stress Scale (PSS). The PSS (Cohen, Kamarck, & Mermelstein, 1983) is a 10-item self-report measure designed to assess the degree to which situations in one's life are appraised as stressful, with higher scores indicating higher stress. The PSS was designed for nonclinical samples and has ample evidence of reliability and validity. In the present sample, internal consistency of the PSS was good ($\alpha = .88$).

Short Psychological Well-Being Scale (SPWB). The SPWB (Ryff, 1989) is an 84-item self-report inventory that measures well-being across six dimensions: Self-Acceptance, Positive Relations With Others, Autonomy, Environmental Mastery, Purpose in Life, and Personal Growth. A Total Well-Being score may be calculated as the sum of the six subscale scores. Participants respond according to a 6-point Likert-type scale. The SPWB has excellent psychometric properties with diverse adult populations (Ryff, 1989), including older adults (e.g., Frazier, Mintz, & Mobley, 2005; Smider, Essex, & Ryff, 1996). In this study, Cronbach's alphas were excellent for the Total Well-Being score ($\alpha = .96$) and good for each of the six subscales (range = .81 for Personal Growth to .90 for Self-Acceptance).

Results

Levels of Depression by Group

Depression levels were determined according to the manual of the BDI-II (scores from 0-13 indicate minimal depression, scores from 14-19 indicate mild depression, scores from 20-28 indicate moderate depression, and scores from 29-63 indicate severe depression). Low levels of depression were expected because it was a convenience sample of community-dwelling adults. For the entire sample, 308 (82%) participants scored in the minimally depressed range, 34 (9%) scored in the mildly depressed range, 24 (6%) scored in the moderately depressed range, and 10 (3%) scored in the severely depressed range.

For the young adults, 179 (78%) scored in the minimally depressed range, 25 (11%) scored in the mildly depressed range, 16 (7%) scored in the moderately depressed range, and 9 (4%) scored in the severely depressed range. For the older adults, 129 (88%) participants scored in the minimally depressed range, 9 (6%) scored in the mildly depressed range, 8 (5%) scored in the moderately depressed range, and 1 (< 1%) scored in the severely depressed range.

Internal Consistency of the BDI-II

For the entire sample, the BDI-II scale mean was 8.61 ($SD = 7.69$) out of 63 possible. Table 2 presents the mean for each item. The internal reliability of the scale was found to be good ($\alpha = .90$). The three best items, according to the item-total correlation, were loss of interest, loss of pleasure, and sadness. See Table 2 for further details.

For the young adults, the BDI-II scale mean was 9.12 ($SD = 8.32$). The internal reliability of the scale was found to be good ($\alpha = .92$). The three best items were loss of interest, loss of energy, and loss of pleasure. For the older adults, the BDI-II scale mean was 7.74 ($SD = 6.43$). The internal reliability of the scale was found to be good ($\alpha = .86$). The three best items were loss of pleasure, sadness, and loss of interest. Again, see Table 2 for further details.

Cross-Sectional Age, Gender, and Ethnicity Effects

The mean score for the young adults on the BDI-II ($M = 9.21$, $SD = 8.50$) was not significantly different than the mean for the older adults ($M = 7.63$, $SD = 6.24$), $t(374) = 1.95$, $p > .05$. Also, the mean score for the men ($M = 8.13$, $SD = 7.50$) was not significantly different than the

Table 2

Internal Reliability of the BDI-II by Group

Item	Whole Sample[a]			Young Adults[b]			Older Adults[c]		
	M (SD)	Item-Total r	α Without Item	M (SD)	Item-Total r	α Without Item	M (SD)	Item-Total R	α Without Item
Sadness	0.32 (0.58)	.62	.89	0.43 (0.66)	.65	.91	0.12 (0.35)	.58	.85
Pessimism	0.36 (0.57)	.58	.89	0.39 (0.57)	.59	.91	0.31 (0.57)	.54	.85
Past failure	0.32 (0.61)	.48	.89	0.35 (0.64)	.48	.91	0.28 (0.57)	.47	.85
Loss of pleasure	0.42 (0.61)	.64	.89	0.43 (0.64)	.66	.91	0.41 (0.55)	.61	.85
Guilty feelings	0.34 (0.53)	.45	.89	0.40 (0.57)	.43	.91	0.25 (0.45)	.47	.86
Punishment feelings	0.22 (0.58)	.49	.89	0.28 (0.66)	.50	.91	0.12 (0.41)	.48	.86
Self-dislike	0.31 (0.68)	.55	.89	0.40 (0.75)	.57	.91	0.15 (0.50)	.48	.86
Self-criticalness	0.45 (0.65)	.56	.89	0.52 (0.69)	.56	.91	0.32 (0.54)	.53	.85
Suicidal thoughts or wishes	0.11 (0.38)	.50	.89	0.12 (0.40)	.55	.91	0.09 (0.34)	.39	.86
Crying	0.32 (0.63)	.51	.89	0.43 (0.69)	.55	.91	0.14 (0.46)	.38	.86
Agitation	0.41 (0.63)	.57	.89	0.51 (0.67)	.58	.91	0.23 (0.52)	.55	.85
Loss of interest	0.35 (0.60)	.64	.89	0.38 (0.65)	.67	.91	0.31 (0.51)	.56	.85
Indecisiveness	0.32 (0.60)	.55	.89	0.35 (0.67)	.61	.91	0.26 (0.48)	.38	.86
Worthlessness	0.21 (0.54)	.59	.89	0.19 (0.54)	.65	.91	0.25 (0.54)	.53	.85
Loss of energy	0.67 (0.63)	.58	.89	0.61 (0.67)	.67	.91	0.77 (0.55)	.44	.86
Changes in sleep pattern	0.83 (0.83)	.37	.90	0.79 (0.75)	.39	.92	0.89 (0.95)	.37	.86
Irritability	0.34 (0.59)	.58	.89	0.44 (0.67)	.65	.91	0.17 (0.37)	.35	.86
Changes in appetite	0.55 (0.71)	.45	.89	0.57 (0.67)	.45	.91	0.51 (0.78)	.48	.86
Concentration difficulty	0.58 (0.64)	.58	.89	0.61 (0.69)	.63	.91	0.51 (0.64)	.49	.85
Tiredness or fatigue	0.64 (0.69)	.55	.89	0.62 (0.67)	.64	.91	0.67 (0.74)	.40	.86
Loss of interest in sex	0.55 (0.91)	.25	.90	0.29 (0.67)	.30	.92	0.98 (10.08)	.43	.86
Total	8.61 (7.69)			9.12 (8.32)			7.74 (6.43)		
Cronbach's α	.90			.92			.86		

a. N = 356.
b. N = 223.
c. N = 133.

9

mean for the women ($M = 8.70$, $SD = 7.80$), $t(365) = -0.69$, $p > .05$. Likewise, the mean score for the Caucasian participants ($M = 8.35$, $SD = 7.26$) was not significantly different than the mean for the non-Caucasians (i.e., all other ethnicities combined; $M = 9.95$, $SD = 9.89$), $t(374) = -1.44$, $p > .05$.

For the young adults, the mean score for the men ($M = 9.01$, $SD = 8.93$) was not significantly different than mean for the women ($M = 9.08$, $SD = 8.26$), $t(218) = -0.05$, $p > .05$. Also, the mean score for the Caucasians ($M = 9.03$, $SD = 8.01$) was not significantly different than the mean for the non-Caucasians ($M = 9.85$, $SD = 10.06$), $t(227) = -0.61$, $p > .05$.

Likewise, for the older adults, the mean score for the men ($M = 7.00$, $SD = 4.99$) was not significantly different than the mean for the women ($M = 8.07$, $SD = 6.99$), $t(145) = -1.03$, $p > .05$, and the mean score for the Caucasians ($M = 7.51$, $SD = 6.14$) was not significantly different than the mean for the non-Caucasians ($M = 11.00$, $SD = 8.89$), $t(145) = -1.23$, $p > .05$. Overall, these results showed no statistically significant or meaningful cross-sectional effects of age, gender, and ethnicity on BDI-II scores.

Association Between BDI-II Items and Age

Pearson product-moment correlations were computed between each of the 21 BDI-II items and age of participants. Ten correlations were found to be significant at the .05 level. Eight of the 10 correlations were negative and the other two were positive. However, most of the correlations were weak, with only one exceeding $r \geq .30$ or $\leq -.30$. The results indicated that increases in age were associated with lower endorsement of the following eight items: Sadness ($r = -.29$), Guilty Feelings ($r = -.15$), Punishment Feelings ($r = -.15$), Self-Dislike ($r = -.19$), Self-Criticalness ($r = -.15$), Crying ($r = -.23$), Agitation ($r = -.21$), and Irritability ($r = -.25$). In contrast, increases in age were associated with higher endorsement of the following two items: Loss of Energy ($r = .13$) and Loss of Interest in Sex ($r = .38$).

Convergent and Discriminant Validity of the BDI-II

Pearson product-moment correlations were calculated between the BDI-II and the CES-D, the CATI Depression subscale, the CATI Anxiety subscale, the SPWB total score and SPWB subscales, the PSS total score, a subjective self-rating of overall physical health (on a 0-100 scale), and the CATI Depressive Personality Disorder subscale. Correlations for the entire sample and the younger and older adult groups are presented in Table 3. All

Table 3

Correlations of the BDI-II With the CES-D Scores, Depression, Anxiety, and Depressive Personality Subscale Scores of the CATI, SPWB Total Scores, SPWB Subscale Scores, PSS Total Scores, and Overall Subjective Health Rating by Group

	Entire Sample ($N = 376$)	Young Adults ($N = 229$)	Older Adults ($N = 147$)
Measure	BDI-II	BDI-II	BDI-II
CES-D	.68***	.69***	.69***
CATI-Depression	.58***	.53***	.66***
CATI-Anxiety	.53***	.48***	.60***
SPWB Total Psychological Well-Being	−.65***	−.69***	−.60***
SPWB–Autonomy	−.33***	−.33***	−.31***
SPWB–Environmental Mastery	−.62***	−.69***	−.52***
SPWB–Personal Growth	−.40***	−.47***	−.33***
SPWB–Positive Relations With Others	−.50***	−.52***	−.48***
SPWB–Purpose in Life	−.60***	−.61***	−.64***
SPWB–Self-Acceptance	−.66***	−.69***	−.61***
PSS Total Score	.67***	.71***	.64***
Overall Perceived Health (self-rated)	−.16**	−.13*	−.27***
CATI–Depressive Personality	.57***	.56***	.59***

Note. Overall perceived health status was measured by a nonstandardized 0 to 100 subjective self-report single item scale, with higher scores indicating better perceived health. BDI-II = Beck Depression Inventory–II; CES-D = Center for Epidemiologic Studies Depression Scale; CATI = Coolidge Axis II Inventory; SPWB = Short Psychological Well-Being Scale; PSS = Perceived Stress Scale.
*$p < .05$. **$p < .01$. ***$p < .001$.

of the correlations for the entire sample and for the two age groups were significant and in the expected directions. As can be seen, the patterns were similar among younger and older adults, with some modest variation.

Specifically among older adults, the BDI-II was significantly, positively, and strongly correlated with both of the depression scales: $r = .69$ with the CES-D scale and $r = .66$ with the CATI Depression scale. The BDI-II also was significantly, positively, and strongly correlated with the CATI Anxiety subscale ($r = .60$). Regarding psychological well-being, the BDI-II was significantly, negatively, and strongly correlated with the SPWB Total score ($r = −.60$) and each of the six SPWB subscales (rs ranging from −.31 to −.64). Regarding stress, the BDI-II was significantly, positively, and strongly correlated with the PSS score ($r = .64$). Regarding the relationship between health status and depression scores, the BDI-II was significantly and

negatively correlated with subjective health ($r = -.27$), with a small to medium effect size. Finally, we explored the relationship between the BDI-II scores and symptoms of Depressive Personality Disorder (DPD) as measured by the CATI. DPD is defined in the *DSM-IV-TR* as a pervasive pattern of depressive cognitions and behaviors reflecting trait-like manifestations of dejected mood, beliefs of worthlessness, self-criticalness, a tendency to brood, criticalness toward others, chronic pessimism, and recurrent guilty feelings. As expected, the results showed a significant, positive, and strong relationship between the BDI-II and the CATI DPD scale ($r = .59$). In general, the pattern of correlations supported the convergent and discriminant validity of the BDI-II among older adults.

Suicidal Ideation

Frequency distributions were generated to determine the pattern of responses to the single BDI-II item regarding Suicidal Thoughts or Wishes. For the young adults, 205 (90%) endorsed "I don't have any thoughts of killing myself," 20 (9%) endorsed "I have thoughts of killing myself but I would not carry them out," 3 (1%) indicated that "I would like to kill myself," and 1 (0.4%) indicated that "I would kill myself if I had the chance." For the older adults, 133 (91.1%) indicated that "I don't have any thoughts of killing myself," 11 (7.5%) indicated that "I have thoughts of killing myself but I would not carry them out," 2 (1.4%) indicated that "I would like to kill myself," and 0 (0%) indicated that "I would kill myself if I had the chance."

To examine whether there is a relationship between the four responses to the BDI-II item Suicidal Thoughts or Wishes and age group, a 2×4 chi-square analysis was performed. The test yielded a nonsignificant relationship between age group and responses to this item, χ^2 (3, $N = 375$) = 0.85, $p > .05$.

Construct Validity: Confirmatory Factor Analysis

According to Steer et al. (2000), two factors representing Noncognitive and Cognitive dimensions of the BDI-II were found in a sample of depressed geriatric inpatients. A confirmatory factor analysis (CFA) was used to examine whether the two factors previously found would fit this study's sample of community-dwelling adults. Specifically, a CFA with multiple-group analysis was used to fit the model simultaneously to multiple groups (e.g., young adults and older adults) to determine if the model

would fit both sets of data. According to CFA, the model did not fit the data well, χ^2 (342, $N = 376$) = 1202.08, $p < .001$, Comparative Fit Index (CFI) = .69, root mean square error of approximation (RMSEA) = .08.

Construct Validity: Principal Components Analysis

A principal components analysis (PCA) with Varimax rotation was conducted on the younger and older groups. Of interest, the failure to confirm the Noncognitive and Cognitive model in the multigroup CFA analyses may have been explained by the fact that Steer et al. (2000) found the Noncognitive factor to be stronger in older adults, whereas in our sample, the Noncognitive factor was actually stronger in younger adults. Overall, we found general confirmation of the items identified as loading for their Noncognitive and Cognitive factors by Steer et al., but our older sample had the opposite weightings, that is, the Cognitive factor accounted for more variance than the Noncognitive factor. More specifically, in our older group data, the Cognitive component accounted for 24% of the total variance (eigenvalue = 5.01), whereas the Noncognitive component accounted for 17% of the variance (eigenvalue = 3.64). In our younger sample, on the other hand, the Noncognitive component accounted for 25% of the total variance (eigenvalue = 5.31), whereas the Cognitive component accounted for 22% of the variance (eigenvalue = 4.54). A subsequent PCA revealed a satisfactory one-component solution for both younger and older groups. For the younger group, a single component had an eigenvalue of 8.08 and accounted for 38% of the variance. Using Steer et al.'s (2000) minimum loading criterion ($\geq .35$), it was found that 20 of 21 BDI items loaded saliently (with the exception of Item 21: Loss of Interest in Sex, which loaded at .34). For the older group, a single component had an eigenvalue of 6.35 and accounted for 30% of the variance. Again, using Steer et al.'s loading criterion, it was found that all 21 BDI items loaded above criterion (indeed, all loaded above .40). See Table 4 for the component loadings of each item among the young adult and the older adult groups.

Discussion

The overall pattern of results strongly supports the use of the BDI-II as a screening instrument for depression among community-residing older adults. The internal scale reliability of the BDI-II was good among older adults ($\alpha = .86$) and only slightly lower than the alpha found among

Table 4
**Component Loadings of the Beck Depression Inventory–II Among
Younger Adults and Older Adults**

Item	Young Adults (N = 229) Component Loadings	Older Adults (N = 147) Component Loadings
Sadness	.69	.69
Pessimism	.65	.66
Past failure	.54	.58
Loss of pleasure	.71	.66
Guilty feelings	.48	.56
Punishment feelings	.56	.57
Self-dislike	.63	.57
Self-criticalness	.61	.64
Suicidal thoughts or wishes	.61	.53
Crying	.61	.47
Agitation	.63	.64
Loss of interest	.72	.62
Indecisiveness	.66	.41
Worthlessness	.71	.65
Loss of energy	.71	.42
Changes in sleep pattern	.43	.37
Irritability	.71	.41
Changes in appetite	.48	.50
Concentration difficulty	.68	.51
Tiredness or fatigue	.68	.43
Loss of interest in sex	.34	.48

younger adults ($\alpha = .92$). The alpha for older adults in the present sample was almost identical to data ($\alpha = .85$) reported by Jefferson et al. (2000) in a sample of community-residing older women. The present study also provided some preliminary evidence of convergent and discriminant validity for the BDI-II among community-dwelling older adults based on the pattern of correlations with similar and dissimilar constructs. As expected, the BDI-II was positively and strongly correlated with the other two depression measures (the CES-D and the CATI-Depression subscale), perceived stress (the PSS), and features of DPD. Also as expected, the BDI-II was negatively and strongly related to overall psychological well-being (measured by the SPWB) and each individual facet (or subscale) of well-being indicating that increases in depression were associated with decreases in well-being. The BDI-II also was inversely related to overall health status, such that decreases in health were associated with increases in depression, although the magnitude of this relationship was modest at best.

Notably, the BDI-II also was positively related to a measure of anxiety (the CATI-Anxiety subscale), suggesting poor discriminant validity between depressive symptoms and anxiety-based symptoms. Unfortunately, relationships between depression and anxiety are not easily teased apart by any screening measure because of the significant overlap of symptoms of depression and anxiety and because of the common comorbidity between depression and anxiety in young adults (Barlow & Campbell, 2000) and older adults (Alexopoulos, 1990; Beekman et al., 2000). Indeed, many individuals with major depression experience clinically significant anxiety (this form is often called "agitated depression") and, conversely, many individuals with a diagnosable anxiety disorder experience significant depressive symptoms (often due to the social impairment and reduced quality of life due to disabling forms of anxiety). It is likely that depression and anxiety share a common diathesis and that the features of each serve as risk factors for the other (Barlow & Campbell, 2000), making the task of effective discrimination by a screening measure difficult.

The one-component solution found in the present study was not consistent with the two-factor solution reported among depressed older adult inpatients (Steer et al., 2000) and younger adult depressed outpatients (Steer et al., 1999). In those two studies, the two factors were labeled Cognitive and Noncognitive (or Somatic-Affective). Methodological factors that may account for this discrepancy include the different nature of the samples (depressed patients vs. purportedly nonpsychiatric community-dwelling individuals) and the different types of extraction techniques. Future studies among larger samples of community-dwelling older adults are needed to cross-validate the present results and confirm whether one robust factor or component underlies the BDI-II. In our opinion, Steer et al.'s first factor (Cognitive) was not well defined and their second factor (Somatic-Affective) is too broad to be conceptually meaningful or practically useful.

Several limitations of the present study deserve mention. First, the sample size was modest and, perhaps more important, it included little ethnic diversity (84% Caucasian). Certainly, future studies should investigate the psychometric characteristics of the BDI-II and provide adequate norms for the scale among diverse ethnic and cultural groups (including younger and older adults). Sadly, this critique applies not merely to the present study but to the extant literature regarding the BDI-II. In their recent review, Dozois and Covin (2004) indicated that the majority of psychometric studies of the BDI-II have primarily included Caucasian individuals, with the average sample composition being 80% Caucasian. Studies of the psychometrics of

assessment instruments among minority groups in later life are particularly pressing given the projected significant increases in the number of minority older adults in the coming decades. Regarding the BDI-II, this type of literature is almost nonexistent, with a notable exception that the BDI-II was found to have good internal consistency, test-retest reliability, and convergent validity in a Korean elderly population (Jo, Park, Jo, Ryu, & Han, 2007).

A second limitation of this study was that because participants in this study were community-residing members, they were likely to be relatively healthy (they were able to complete the questionnaire packet independently) and not likely to be experiencing disabling forms of cognitive impairment. Future studies should investigate the psychometric properties of the BDI-II among older medical patients, among particularly frail older adults (e.g., residents of nursing homes), and among those with varying degrees of cognitive problems to more specifically examine the extent to which physical impairment, cognitive impairment, and the interactions of both types of problems affect BDI-II scores. In one of the few reports in this area, Wagle, Ho, Wagle, and Berrios (2000) studied the psychometric properties of the revised BDI among older adults with Alzheimer's disease and depression and found that the measure significantly underdiagnosed depression in the context of a dementing illness. Wagle et al. suggested that the lack of awareness of being ill in some patients with Alzheimer's disease might have resulted in a high number of false negative responses to the BDI, and they further hypothesized that the BDI might not be sensitive to the relatively low levels of depression characteristic of patients with Alzheimer's disease. Notably, the somatic items of the BDI were reported to not confound the overall precision of the BDI, suggesting that other factors played a role in the poor psychometrics of the measure.

A final limitation of this study was that we did not include a "gold standard" measurement of diagnosable major depressive disorder, for example, through application of a structured or semistructured diagnostic interview. As such, we were unable to examine the psychometric concepts of sensitivity and specificity of BDI-II cutoff scores as they relate to a formal diagnosis of depression. Further research also should investigate the utility and appropriateness of the BDI-II among adults in the oldest age groups, the so-called old-old typically defined as 85 years old and older.

As noted earlier, thorough, objective, and ongoing assessment of clients is a trademark of behavioral and cognitive-behavioral psychotherapy. Regarding the treatment of depression, self-report rating scales such as the BDI-II can serve several useful purposes. For example, the BDI-II can

be administered at the very beginning of treatment to formally screen for depression. Positive cases based on the screening results are typically followed up with an unstructured clinical interview, a structured or semi-structured interview, or a functional assessment of depressive symptoms (the follow-up typically involves some combination of these assessment strategies). In addition, the BDI-II may be administered on a repeated basis as part of the ongoing assessment of depressive symptoms experienced by the client. Through regular and repeated measurement points (e.g., each session or every second session), progress in treatment can be easily and effectively monitored. Finally, through examination of the content of specific BDI-II items endorsed in the depressive direction, the clinician and client can collaboratively identify and select specific targets for intervention (e.g., anhedonia, poor sleep, poor eating, self-critical beliefs), thus advancing the therapeutic process.

In conclusion, despite the aforementioned limitations of the present study, our overall findings point to the solid psychometric properties of the BDI-II among community-dwelling older adults. Because several biological and psychological treatments for depression are known to be highly effective (see two excellent reviews: Pinquart, Duberstein, & Lyness, 2006; Scogin, Welsh, Hanson, Stump, & Coates, 2005), adequate detection of cases is imperative. The BDI-II should be considered as one option among several other validated measures as an effective screening instrument for depression among older adults. It also may provide helpful data to be used in psychotherapeutic treatment planning and in the monitoring of progress.

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