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FACTORS OF THE BECK HOPELESSNESS SCALE: FACT OR ARTIFACT?

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ABSTRACT

Weighted least-squares factor analyses of the tetrachoric correlations, principal components analyses of the G-index correlations, and principal components analyses of the phi correlations among the 20 items of the Beck Hopelessness Scale were conducted with 1,126 outpatients who were diagnosed with primary mood disorders and 732 who were diagnosed with primary anxiety disorders. Two dimensions reflecting *pessimism* about the future and *resignation* to the futility of changing the future were found in both diagnostic groups, regardless of factor analytic method or type of data transformation.

INTRODUCTION

The Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974; Beck & Steer, 1993) is a self-report instrument that is frequently employed to measure hopelessness or pessimism about the future and has consistently been reported to be positively related to suicidal behavior and ideation (Beck, 1986). The BHS was specifically developed by Beck et al. (1974) to measure depressed patients' negative views about the future, and pessimism about the future is one of the constructs contained in the negative cognitive triad that Beck (1967, 1976) proposed in his cognitive model of depression. The other two constructs stress negative views of oneself and the world. However, psychiatrists rank hopelessness as the most important risk factor for judging suicidal risk (Truant, O'Reilly, & Donaldson, 1991).

In the original principal-components analysis of the BHS with 294 adult inpatient-suicide attempters, Beck et al. (1974) identified three dimensions which they

called "Feelings about the Future," "Loss of Motivation," and "Future Expectations," but there is controversy about whether the BHS reflects more than one dimension. Nekanda-Trepka, Bishop, and Blackburn (1983) conducted a principal components analysis with 86 depressed outpatients and found five components, whereas Mendonca, Holden, Mazmanian, and Dolan (1983) concluded that a one component solution was preferable to a three component solution with 78 patients presenting to a psychiatric crisis center. More recently, Hill, Gallagher, Thompson, and Ishida (1988) extracted three principal components for 120 older psychiatric outpatients and reported that their components were comparable to those found by Beck et al. (1974). Hill et al. (1988) labeled their components, "Hopelessness about the Future," "Giving Up," and "Future Anticipation."

A principal components analysis of the BHS was also conducted by Steer, Kumar, and Beck (1993) with 108 adolescent inpatients between 12 and 17 years old who were diagnosed with mixed psychiatric disorders. They found three components whose item compositions were comparable to those previously reported by both Beck et al. (1974) and Hill et al. (1988) for adults and called them, "Rejection of the Possibility of a Hopeful Future (Rejection)," "Acceptance of the Inevitability of a Hopeless Future (Acceptance)," and "Resignation to the Futility of Changing the Future (Resignation)."

Finally, Steer, Iguchi, and Platt (1994) administered the BHS to 2,379 intravenous (IV) drug users who were not currently enrolled in a treatment program and seeking HIV testing and counseling, and the Resignation, Rejection, and Acceptance components again emerged. Furthermore, the compositions of these three components were comparable to those originally described by Beck et al. (1974), and the three components displayed different patterns of relationships with the IV drug users' background and clinical characteristics. For example, the Rejection dimension was positively related to testing HIV positive, whereas the other two dimensions were not (Steer et al., 1994).

Although Beck and Steer (1993) suggested that the number of BHS dimensions was dependent upon the diagnostic compositions of samples being studied, we observed in the six principal components studies that were described above that three dimensions have consistently emerged across the samples which contain the same sets of marker items. There was a component that had high loadings for the following three items: item #9 ("I just don't get the breaks, there's no reason to believe I will in the future."), item #16 ("I never get what I want so it is foolish to want anything."), and item #20 ("There's no use in really trying to get something I want because I probably won't get it."). A second component was composed of items #1 ("I look forward to the future with hope and enthusiasm.") and item #15 ("I have great faith in the future."), and a third component contained items #4 ("I can't imagine what my life would be like in 10 years.") and item #18 ("The future seems vague and uncertain to me."). The three marker items representing the first dimension were found in the "Loss of Motivation" component that was identified by Beck et al. (1974), in the "Giving Up" component by Hill et al. (1988), and in the "Resignation to the Futility of Changing the Future" component by Steer et al. (1993, 1994). The items in the two latter sets reflected, respectively, the Rejection and Acceptance components that Steer et al. (1993, 1994) had discussed as being sensitive to the positive and negative wording of the BHS items.

Approaching the question about the dimensionality of the BHS from the perspective of item-response theory (Lord & Novick, 1956), Young, Halper, Clark, Scheftner, and Fawcett (1992) conducted full-information factor analyses (Bock, Gibbons, & Muraki, 1988) with the tetrachoric correlations among the 20 BHS responses of 730 adult outpatients who volunteered for the National Institute of Mental Health (NIMH) Collaborative Study of the Psychobiology of Depression and a mixed sample of 257 patients and normal adults. Although they reported that there was statistical support for the existence of more than one maximum-likelihood factor, Young et al. (1992) also found that none of the additional factors explained more than 6% of the total variance in either sample. The first factors, respectively, explained 53.0% and 55.5% of the NIMH and mixed samples' total variances. Young et al. (1988, p. 585) concluded that the BHS constituted a single dimension of hopelessness and stated, "More complex multidimensional models, while demonstrating some statistical superiority, offered no additional explanatory or conceptual advantage."

The purpose of the present study is to compare the factor structures of the BHS in outpatients diagnosed with either primary mood disorders or primary anxiety disorders to determine whether different methods of factor analysis and data transformations yield comparable dimensions of hopelessness for these two diagnostic groups. We chose these two broad diagnostic groups because Beck and Steer (1993) had found that outpatients diagnosed with primary mood disorders had higher mean BHS scores than those diagnosed with primary anxiety disorders, and we wished to compare the factor structures of the BHS for patients with different mean levels of hopelessness. Young et al. (1992, p. 585) cautioned that the BHS was "relatively insensitive in measuring lower levels of hopelessness", and we wanted to ascertain whether the BHS would yield fewer factors in patients with less severe hopelessness.

METHOD

SAMPLES

For the purposes of the present analyses, we selected 1,126 (52.0%) outpatients diagnosed with primary mood disorders and 732 (33.8%) outpatients diagnosed with primary anxiety disorders from a total sample of 2,165 outpatients who were evaluated at the Philadelphia Center for Cognitive Therapy (CCT) between January, 1986, and October, 1992, for whom complete BHS data were available.

All of the outpatients were diagnosed with the Structured Clinical Interview for DSM-III-R (SCID; Spitzer, Williams, & Gibbon, 1987). Only primary DSM-III-R (American Psychiatric Association, 1987) Axis I diagnoses were focused upon here because prior research comparing patients by Axis I primary, secondary, tertiary, and Axis II (personality) disorders had found that the primary diagnostic group was the most important classification for differentiating among outpatients with respect to severity of hopelessness (Beck & Steer, 1993). A detailed description of the SCID training procedures used at the CCT and of the interjudge reliabilities that have been obtained with these procedures are presented by Riskind, Beck, Berchick, Brown, and Steer (1987). However, no interjudge agreement study was conducted with respect to the present diagnoses.

MOOD DISORDERS

The outpatients with mood disorders were composed of 478 (42.5%) men and 648 (57.5%) women. There were 1,055 (93.7%) Whites, 42 (3.9%) Blacks, and 29 (2.6%) Asians. The mean age was 37.29 (SD = 11.80) years old. There were 254 (22.6%) with single-episode major depression, 529 (47.0%) recurrent-episode major depression, 149 (13.2%) dysthymia, 82 (7.3%) depression not-otherwise-specified (NOS), and 112 (9.9%) bipolar disorders.

ANXIETY DISORDERS

For the outpatients with anxiety disorders, there were 310 (42.3%) men and 422 (57.7%) women. There were 690 (94.3%) Whites, 28 (3.8%) Blacks, and 14 (1.9%) Asians. The mean age was 35.66 (SD = 11.22) years old. There were 184 (25.1%) panic with agoraphobia, 153 (20.9%) panic without agoraphobia, 161 (22.0%) generalized anxiety, 94 (12.8%) social phobia, 51 (7.0%) obsessive compulsive, 52 (7.1%) anxiety NOS, 27 (3.7%) simple anxiety, 7 (1.0%) agoraphobia without a history of panic, and 3 (0.4%) post-traumatic stress disorders.

SAMPLE COMPARISONS

The proportions of men and women in the mood and anxiety samples were comparable, X^2 (1, N = 1,858) = 0.0, ns., and the proportions of Whites, Blacks, and Asians reflected in both samples were also comparable, X^2 (2, N = 1,858) = 0.87, ns. The outpatients diagnosed with mood disorders were older than those diagnosed with anxiety disorders, t (1,856) = 2.96, $p < .01$.

PROCEDURE

After signing voluntary consent forms, the outpatients were routinely administered the BHS as part of the standard intake battery of psychological tests and psychiatric rating scales given to all outpatients being evaluated at the CCT. The SCID-derived diagnoses were also made at this time.

FACTOR ANALYTIC CONSIDERATIONS

A major methodological problem incurred in assessing the factor structure of the BHS is that this scale is composed of dichotomous items. There are 20 true-false items assessing the expectation that one will not be able to overcome an unpleasant life situation or attain things that one values. Nine of the items are keyed false, and 11 are keyed true with 1s being assigned to negative expectations and 0s being assigned to positive expectations. The item responses are summed to yield total scores ranging from 0 to 20. Although the approximate balancing between positively and negative scored items affords some protection against item response biases (Mendonca et al., 1983), there are problems incurred in using dichotomous variables in factor analyses (See Comrey (1988) and Gorsuch (1983) for detailed discussions.)

Briefly, the marginal distributions in the responses of the BHS items would impose limits on the magnitudes of the phi correlations that can be achieved. Spurious difficulty factors can emerge because items with similar marginal distributions will tend to be more highly correlated with one another than those with dissimilar marginal distributions. Gorsuch (1983) suggests that difficulty factors may be identified by factors that are composed of items with similar mean values.

Various data transformations have been proposed to adjust for disparate marginal distributions and to limit the emergence of difficulty factors. For example, Holley and Guilford (1964) proposed the use of the G index, which transforms every item into having a mean of 0.50 and standard deviation of 0.50 by creating an mirror image of the existing data matrix. The item responses for every respondent are reversed as a new set of data, and this reversed set is then appended to the existing set for final analysis. However, Gorsuch (1974) cautions that the extraction of factors based on the G index is oriented toward the combined sample, and the resultant factors are often difficult to interpret.

In discussing the factor analysis of dichotomous data, Joreskog and Sorbom (1988, pp. 202-204) presented an approach using a weighted least-squares factor analysis in which the asymptotic covariance matrix of the tetrachoric correlations among the dichotomous variables is employed. The full-information factor analysis approach used by Young et al. (1992) uses tetrachoric correlations. However, Gorsuch (1983) warns that matrices based upon tetrachoric correlations are often singular and cannot be entered into maximum-likelihood factor-analyses, unless statistical adjustments, such as those incorporated into the full-information factor analysis (Bock et al., 1983), are employed to control for singular correlation matrices (Heywood cases). Gorsuch (1983, pp. 296-297) has suggested, "Phi and point biserial correlation coefficients are better choices for factor analytic work because they are always within normal ranges and give Gramian matrices. The product-moment coefficients also represent relationships in the actual data rather than attempting to generalize to a theoretical variable that has not been observed."

Wilkinson (1985, p. 264) concluded that factor solutions derived from principal components and common factor analyses "rarely differ enough to matter", and Parry and McArdle (1991) found that more sophisticated psychometric models for conducting factor analyses of dichotomous variables were not "markedly" superior to less sophisticated approaches.

PRESENT FACTOR ANALYTIC APPROACHES

Our first approach here involved performing principal components analyses of the phi correlations among the 20 BHS items. A principal components analysis of the G-index correlations among the 20 BHS items represented the second approach, and a weighted least-squares factor analysis of the tetrachoric correlations using the asymptotic covariance matrix reflected the third approach. The latter analysis employed PRELIS (Joreskog & Sorbom, 1986) to calculate the two sets of tetrachoric intercorrelations and asymptotic covariance matrices for the outpatients with either mood or anxiety disorders.

CALIS (SAS Institute, 1990) was used to conduct the exploratory weighted-least-squares factor analyses. A weighted least-squares factor analysis was

employed, instead of a maximum likelihood approach, because (1) the tetrachoric correlation matrix for the outpatients diagnosed with anxiety disorders was singular and (2) Joreskog and Sorbom (1988) indicated that the weighted least-squares approach would yield better estimates of the standard errors for dichotomous data than a maximum-likelihood approach would.

FACTOR (SAS Institute, 1990) was employed to perform the principal components analyses. Varimax rotations were employed for all of the principal components and factor analyses. Kaiser, Hunka, and Bianchini's (1971) factor similarity index was used to compare the structures between the outpatients diagnosed with either mood or anxiety disorders. This index represents the mean cosine between the two sets of components or factors and is interpreted as a correlation coefficient. The correlations among the principal components and factor scores were used to compare factor analytic techniques.

RESULTS

The mean BHS total scores for the outpatients diagnosed with either mood or anxiety disorders were 11.13 (SD = 5.24) and 7.52 (SD = 5.32), respectively. The mean BHS score of the mood disorder sample was higher than that for the anxiety disorder sample, t (1,856) = 14.43, $p < .001$. According to Beck and Steer's (1993) diagnostic ranges, the outpatients who were diagnosed with mood disorders had described moderate hopelessness, whereas the outpatients who were diagnosed with anxiety disorders had reported mild hopelessness. The mean BHS score for the mood disorder group was higher than the mean BHS scores that were reported by Young et al. (1992) for their major affective [N = 730, M = 6.28, SD = 5.52, t (1,854) = 19.07, $p < .001$] and mixed diagnostic [N = 257, M = 7.00, SD = 5.80, Welch's t' (357) = 19.07, $p < .001$] groups. The mean BHS score of the anxiety disorder group was higher than that found in Young et al.'s (1992) major affective sample, t (1,460) = 4.37, $p < .001$, but comparable to that found in their mixed diagnostic sample, Welch's t' (417) = 1.26, ns.

ITEM ANALYSES

The Kuder-Richardson 20 (KR-20) for the BHS was 0.93 in the outpatients diagnosed with mood disorders, and the KR-20 was 0.90 for the outpatients diagnosed with anxiety disorders. All of the corrected item-total correlations of the 20 BHS items shown in Table 1 for both diagnostic samples were significant beyond the .001 level, one-tailed test, even after Bonferroni adjustments (alpha / 20) were used to control for the familywise error rate. Using Fisher Z' transformations, we calculated the mean corrected-item total correlations for the BHS in the diagnostic groups. The mean correlation of 0.51 (SD = 0.16) for the mood disorder sample was comparable to the mean correlation of 0.54 (SD = 0.16) for the anxiety disorder sample, t (38) = 0.76, ns.

The means and standard deviations of the BHS items presented in Table 1 for the outpatients with either mood or anxiety disorders support the concerns about whether the previously reported principal components for the BHS might be artifacts of disproportional splits in the BHS items. For both the mood and anxiety samples, the BHS items with the lowest means within each respective sample were for items #2, #9, #16, and #20 (Table 1). Three of these four items are the

TABLE 1

MEANS, STANDARD DEVIATIONS, AND CORRECTED ITEM-TOTAL CORRELATIONS FOR THE BECK HOPELESSNESS SCALE BY DIAGNOSTIC GROUP

	Mood			Anxiety		
Item	M	SD	r	M	SD	r
1	0.73	0.44	0.55	0.48	0.50	0.59
2	0.21	0.41	0.47	0.10	0.29	0.42
3	0.46	0.50	0.45	0.28	0.45	0.46
4	0.77	0.42	0.31	0.63	0.48	0.45
5	0.59	0.49	0.26	0.50	0.50	0.24
6	0.55	0.50	0.60	0.33	0.47	0.61
7	0.62	0.49	0.63	0.37	0.48	0.66
8	0.74	0.44	0.39	0.62	0.49	0.43
9	0.39	0.49	0.51	0.24	0.43	0.47
10	0.62	0.49	0.35	0.45	0.50	0.45
11	0.49	0.50	0.64	0.30	0.46	0.65
12	0.68	0.47	0.62	0.44	0.50	0.67
13	0.45	0.50	0.57	0.32	0.47	0.51
14	0.69	0.46	0.54	0.45	0.50	0.64
15	0.78	0.41	0.53	0.55	0.50	0.62
16	0.22	0.41	0.47	0.08	0.27	0.42
17	0.39	0.49	0.65	0.17	0.38	0.63
18	0.89	0.31	0.36	0.73	0.45	0.52
19	0.58	0.49	0.66	0.35	0.48	0.68
20	0.29	0.46	0.55	0.15	0.35	0.53

Note — n for mood disorders = 1,126, and n for anxiety disorders = 732. All of the corrected item-total correlations were significant beyond the .001 level, one-tailed test (Bonferroni alpha / 20).

items that were described above as constituting the Resignation dimension that was observed by us to occur in all six previously reported principal-components analyses of the BHS. In contrast, items #1, #4, #15, and #18 displayed some of the highest means in Table 1, and these items represent the other dimensions that were discussed above as reflecting the Rejection and Acceptance dimensions.

STRUCTURES

To determine the number of dimensions underlying the BHS responses in both diagnostic groups, we first examined the goodness of fit indices for the weighted least-squares factor analyses of the tetrachoric correlations shown in Table 2. The

chi-square tests revealed that four factors were statistically sufficient to explain the covariation in the mood disorder sample, whereas three factors were statistically sufficient to describe the covariation in the anxiety disorder group. However, the magnitudes of the root-mean-squares given in Table 2 indicated that only small amounts of the total residual variance in both samples were accounted for beyond that explained by the first factors in both samples. Additional factors afforded < 5% reductions in the root-mean-squares for both samples.

TABLE 2

CHI-SQUARE STATISTICS AND ROOT-MEAN-SQUARES BY NUMBER OF WEIGHTED LEAST-SQUARES FACTORS

Number of factors	Chi-Square	(df)	Root-Mean-Square
Mood			
One	792.24*	170	.08
Two	354.65*	151	.06
Three	209.03*	133	.04
Four	135.74	116	.03
Anxiety			
One	437.13*	170	.08
Two	213.25*	151	.05
Three	125.21	133	.04

Note — n for mood disorders = 1,126, and n for anxiety disorders = 732.
* $p < .001$

To explore whether any of the BHS dimensions were robust with respect to type of factor analysis and data transformation, we first calculated three-factor solutions for the tetrachoric, phi, and G-index correlations in both diagnostic samples. As mentioned previously, the weighted least-squares approach was used with the tetrachoric correlations, and the principal components approach was used with the phi and G-index correlations. Although visual inspection of the magnitudes of the salient (≥ .40) loadings for the resultant three-factor solutions suggested that the factors extracted for the tetrachoric and phi correlations were similar, only one component, identified by items #9, #16, and #20 (Resignation), existed across all three types of analysis. The salient loadings for the other two principal components based on the G-index correlations were dissimilar to those that were based on the tetrachoric and phi correlations. Therefore, we calculated two factor solutions to ascertain whether this number of factors displayed more congruency with respect to similar patterns of salient loadings not only between samples using the same factor analytic techniques, but also across factor analytic techniques.

TABLE 3

VARIMAX-ROTATED FACTOR LOADINGS FOR THE BECK HOPELESSNESS SCALE BY TYPE OF CORRELATION AND DIAGNOSTIC GROUP ALONG WITH CORRELATIONS AMONG THE DIFFERENT TYPES OF FACTOR SCORES

Item	Pessimism			Resignation		
	Tetrachoric	G-Index	Phi	Tetrachoric	G-Index	Phi
Mood						
1	0.78	0.75	0.67	0.27	0.08	0.19
2	0.42	-0.25	0.11	0.63	0.76	0.67
3	0.55	0.25	0.40	0.28	0.47	0.32
4	0.42	0.66	0.46	0.23	-0.18	0.04
5	0.29	0.36	0.26	0.20	0.09	0.16
6	0.74	0.53	0.62	0.31	0.41	0.30
7	0.69	0.64	0.61	0.46	0.35	0.37
8	0.39	0.64	0.41	0.38	-0.05	0.20
9	0.28	0.12	0.20	0.70	0.63	0.62
10	0.43	0.48	0.43	0.20	0.09	0.11
11	0.60	0.42	0.46	0.57	0.59	0.54
12	0.52	0.69	0.52	0.67	0.25	0.44
13	0.72	0.33	0.50	0.35	0.58	0.42
14	0.43	0.65	0.42	0.66	0.20	0.45
15	0.81	0.79	0.69	0.24	-0.04	0.13
16	0.18	-0.25	0.03	0.89	0.77	0.75
17	0.61	0.20	0.36	0.63	0.77	0.67
18	0.64	0.78	0.60	0.19	-0.34	-0.06
19	0.73	0.61	0.61	0.46	0.44	0.41
20	0.29	-0.07	0.12	0.85	0.79	0.77

Type	Correlations among Different Types of Factor Scores					
Tetra	1.00			1.00		
G-Index	0.89	1.00		0.80	1.00	
Phi	0.93	0.95	1.00	0.93	0.92	1.00

Table 3, continued

Item	Pessimism			Resignation		
	Tetrachoric	G-Index	Phi	Tetrachoric	G-Index	Phi
Anxiety						
1	0.81	0.65	0.71	0.23	0.26	0.14
2	0.46	-0.12	0.13	0.60	0.87	0.63
3	0.52	0.20	0.39	0.36	0.63	0.35
4	0.46	0.62	0.52	0.43	-0.11	0.14
5	0.22	0.26	0.22	0.25	0.12	0.18
6	0.73	0.45	0.63	0.36	0.57	0.27
7	0.75	0.56	0.68	0.43	0.51	0.29
8	0.37	0.58	0.48	0.50	-0.07	0.17
9	0.26	0.15	0.26	0.71	0.69	0.53
10	0.45	0.47	0.50	0.38	0.26	0.17
11	0.61	0.36	0.50	0.59	0.69	0.52
12	0.59	0.61	0.61	0.64	0.41	0.40
13	0.63	0.28	0.42	0.34	0.61	0.40
14	0.47	0.58	0.54	0.72	0.38	0.43
15	0.83	0.73	0.74	0.28	0.14	0.14
16	0.21	-0.15	0.03	0.93	0.88	0.76
17	0.64	0.12	0.35	0.64	0.87	0.70
18	0.74	0.74	0.70	0.36	-0.29	0.02
19	0.81	0.52	0.66	0.39	0.58	0.35
20	0.35	0.01	0.17	0.84	0.87	0.77
Type	Correlations among Different Types of Factor Scores					
Tetra	1.00			1.00		
G-Index	0.91	1.00		0.64	1.00	
Phi	0.95	0.97	1.00	0.87	0.90	1.00

Note — n for mood disorders = 1,126, and n for anxiety disorders = 732. The loadings of the marker items used in identifying the factors are underlined.

STRUCTURE COMPARISONS

Table 3 presents the varimax-rotated loadings for the BHS items for the outpatients diagnosed with either mood or anxiety disorders. Kaiser's Measures of Sampling Adequacy (Dziuban & Shirkey, 1974) were 0.93 and 0.94, respectively, for the outpatients diagnosed with either mood or anxiety disorders. Both of these MSA values were considered by Kaiser (1970) to be "marvelous." The first principal components based on the phi correlation matrices of the outpatients

diagnosed with either mood or anxiety disorders explained, respectively, 33.5% and 36.1% of the total variance, whereas the second components explained, respectively, 7.7% and 7.8% of the total variance.

The patterns of salient ($\geq .40$) loadings for the two factor solutions shown in Table 3 were quite similar. The correlations among the different types of factor and principal components scores reflecting the two dimensions shown in Table 3 were highly positive and significant ($ps < .001$), and the three mean-factor similarity indices (Kaiser et al., 1971) that were calculated between the factor and principal components structures for the mood and anxiety groups were all equal to 0.99.

We next inspected the magnitudes of the loadings shown in Table 3 and observed that there were two sets of marker items in all six factor structures that displayed salient loadings on the same dimension and had low loadings on the opposite dimension. For operational purposes, we identified these sets of marker items by looking for items that had three loadings $\geq .40$ on the same content dimension across all six factor analyses and also had three loadings $< .40$ on the opposite content dimension. The first principal components or factors shown in Table 3 were thus composed of item #1 ("I look forward to the future with hope and enthusiasm."), item #10 ("My past experiences have prepared me well for the future."), item #15 ("I have great faith in the future."), and item #18 ("The future seems vague and uncertain to me."). These four items reflected general *pessimism* about the future.

A second dimension that occurred across all six factor structures given in Table 3 was composed of item #9 ("I just don't get the breaks, there's no reason to believe I will in the future."), item #16 ("I never get what I want so it is foolish to want anything."), and item #20 ("There's no use in really trying to get something I want because I probably won't get it."). This set of marker items denoted the dimension that Beck et al. (1974) referred to as "Loss of Motivation," Hill et al. (1988) considered to reflect "Giving Up," and Steer et al. (1993, 1994) called "Resignation to the Futility of Changing the Future." We preferred the latter designation here.

DISCUSSION

There are several conclusions that can be drawn from the different types of factor analyses which were performed with the BHS for outpatients diagnosed with either primary mood or primary anxiety disorders. First, regardless of the factor analytic approach or type of data transformation that was employed, the first factor or component that emerged in both diagnostic groups was general *pessimism* about the future and the second factor or component was *resignation* to the futility of changing the future. Young et al.'s (1992) finding that the structure of the BHS was not dependent on the diagnostic composition of the sample was supported. We found that the compositions of our *pessimism* and *resignation* dimensions were comparable for (1) outpatients who were diagnosed with anxiety disorders and described mild hopelessness and (2) outpatients who were diagnosed with mood disorders and reported moderate hopelessness.

Second, there was support for Young et al.'s (1992) finding that the amount of variance contributed to the explanation of the overall set of BHS responses by the

extraction of additional factors was small compared to that afforded by the first factor by itself. The *pessimism* dimension here explained approximately eight times the total amount of variance that was described by the *resignation* dimension in either diagnostic group. However, although the relative importance of the second dimension was small, we disagree with the Young et al.'s (1992, p. 585) conclusion that additional factors of the BHS, such as *resignation*, afford "no additional explanatory or conceptual advantage."

The *resignation* dimension stresses how futile a patient might feel about making any attempt to change his or her future, whereas the *pessimism* dimension emphasizes his or her beliefs about the future. The former dimension addresses motivational issues, and the latter dimension highlights dysfunctional attitudes and cognitions. Clinically, these two aspects of hopelessness may require different types of psychotherapeutic interventions. For example, a behavioral reinforcement approach might be employed to reward an unemployed patient who actually applies for a job or enrolls in a job training program, whereas cognitive therapy might be used to help the same patient replace incorrect beliefs, premises, and expectations about potentially working with more realistic ones.

Third, the present findings have implications for the use of different factor-analytic approaches with dichotomous data, such as those contained in the BHS. The common factor and principal components analyses produced comparable results, regardless of whether a tetrachoric or G-index transformation was employed. Our analyses thus supported Gorsuch's (1983) recommendation about using phi correlations for the analysis of dichotomous data, and the principal components approach yielded results that were comparable to those afforded by the more sophisticated, weighted-least-squares factor analysis. However, the present item analyses for the BHS stress the need for a strong empirical framework, such as that provided by the six previous principal-components analyses that we identified above, against which to judge whether spurious difficulty factors have arisen.

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