Self-Blame Attributions in Women With Newly Diagnosed Breast Cancer: A Prospective Study of Psychological Adjustment

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Associations between self-blame and anxiety and depression symptoms in a sample of 76 women with breast cancer were investigated. At diagnosis, behavioral self-blame was associated with increased distress; at 3 months postdiagnosis, characterological self-blame was positively associated with affective symptoms and behavioral self-blame approached significance ($p = .07$); and at 6 months, behavioral self-blame was related to increased distress. Prospective analyses revealed that characterological self-blame at diagnosis approached significance in predicting distress at 3 months ($p = .055$) and was significant in predicting distress at 6 months and at 1 year after diagnosis. These data indicate that behavioral self-blame is a correlate of concurrent affective symptoms, whereas characterological self-blame predicts increased distress over time. Implications for social–cognitive processes in adaptation to breast cancer are discussed.

Key words: breast cancer, self-blame, psychological distress, stress adaptation

Social–cognitive models of adaptation have identified a number of internal and external factors that influence adjustment to stressful life events. Cognitive appraisals have emerged in this literature as one important determinant of psychological adjustment (e.g., Carver & Scheier, 1990; Janoff-Bulman, 1992; Lazarus & Folkman, 1984; Taylor, 1983). In particular, attributions of self-blame among victims of adversity have been linked to affective distress (see Tennen & Affleck, 1990, for a review). Although there are few clearly known causes for breast cancer, there are several theories implicating behavioral and personality dimensions (e.g., the belief that failure to manage stress in one's life can lead to cancer). Given the inconclusive but highly publicized nature of these diverse theories, many women with breast cancer generate personal theories of causation and responsibility, and in some instances, internal factors are targeted in these explanations. The purpose of the present study is to examine how self-blame functions in the process of adjustment to newly diagnosed breast cancer.

Some researchers have argued that self-blame is associated with poorer psychological adjustment, and specifically, with symptoms of depression (e.g., Abramson, Seligman, & Teasdale, 1978; Peterson, Schwartz, & Seligman, 1981). Contrasting with this perspective is a finding by Bulman and

Wortman (1977) that self-blame in accident victims was associated with positive adaptational outcomes in the months following the accident. This study spurred both theoretical and empirical efforts to understand how, why, and when self-blame might be adaptive.

In an attempt to address these diverse perspectives and findings, Janoff-Bulman (1979, 1992) distinguishes between two distinct types of self-blame. Characterological self-blame is defined as blame directed at stable personality traits (e.g., "I blame myself for being the person I am"). Characterological self-blame is hypothesized to be associated with poor psychological adjustment because inherent to this type of self-blame is a sense of helplessness—a belief that there is nothing one can do to change these stable aspects of the self (Janoff-Bulman, 1992). Behavioral self-blame is defined as blame directed at specific behaviors or habits in which a person engages (e.g., "I blame myself for not eating a more healthy diet"). Behavioral self-blame is believed to be associated with successful psychological adaptation because recognition that one's behavior is the cause of the stressor provides a concrete sense of control and the opportunity for change and prevention.

Empirical research on the association between self-blame and adjustment to cancer is replete with inconsistencies. Timko and Janoff-Bulman (1985) found that among postmastectomy breast cancer patients, behavioral attributions of blame were positively associated with perceptions of invulnerability to cancer recurrence, whereas personality attributions of blame were negatively associated with these beliefs. Although self-blame was not directly associated with affective distress, perceptions of invulnerability were predictive of less distress. In another sample of postmastectomy patients, Taylor, Lichtman, and Wood (1984) found that self-attributions of causality were inconsistently correlated with psychological adjustment: Between 17 and 36 months

after surgery, they were associated with better adjustment, but prior to and beyond this time point, self-attributions were not significantly associated with adjustment. In a sample of early and advanced-stage breast and gynecologic cancer patients, Gotay (1985) found no relationship between either behavioral or characterological self-blame and adjustment.

Two more recent studies have found associations between self-blame and poorer psychological adjustment. In a prospective study with a heterogeneous sample of cancer patients, attributions of characterological self-blame and the interaction of characterological and behavioral self-blame near the time of diagnosis predicted poor psychological adjustment 4 months later, whereas behavioral self-blame alone showed no relationship to distress (Malcarne, Compas, Epping-Jordan, and Howell, 1995). Finally, Houldin, Jacobsen, and Lowery (1996) found that in a sample of breast cancer patients, both types of self-blame were strongly associated with worse psychological adjustment.

There are several explanations for the discrepancies in this literature. First, the diverse ways in which self-blame has been measured across these studies render the mixed results somewhat difficult to interpret. Particularly problematic is the fact that in some of these studies, self-blame is assessed indirectly through questions about responsibility and causality (Taylor et al., 1984; Timko & Janoff-Bulman, 1985). Shaver and Drown (1986) described how self-blame is often confused with these related constructs that could be associated with different adaptational outcomes. It is noteworthy that when directly assessed, self-blame was correlated only with increased affective distress in prior studies (Houldin et al., 1996; Malcarne et al., 1995). Second, self-blame may be adaptive at certain points in the process of adjustment and maladaptive at other points. The considerable variability in timing of data collection (time since diagnosis) reflected in this set of studies may have contributed to different outcomes. Third, the inconsistent results may further be explained by the fact that several of these studies included mixed cancer samples. Self-blame attributions may function differently in adjustment to breast cancer than in adjustment to other cancers in which medical causes are better established.

In the present study, in order to address these limitations, we constructed the self-blame questions with direct wording to prevent confusion with the related conceptual constructs. Moreover, self-blame and adjustment were assessed at specific time points after initial cancer diagnosis. Finally, the sample was homogeneous with regard to type of cancer (all breast cancer patients). Building on the work of Malcarne et al. (1995), this study examined both cross-sectional and prospective associations between self-blame and distress and is the first study to investigate the outcomes of self-blame in breast cancer patients from diagnosis to a full year after diagnosis.

We hypothesized the following: (a) Both behavioral and characterological self-blame would be cross-sectionally associated with increased symptoms of anxiety and depression in the first several months after a diagnosis of breast cancer. This hypothesis was based on prior findings of the positive association between self-blame and distress among cancer

patients (Houldin et al., 1996); (b) based on prior theoretical and empirical work suggesting that blaming stable personality features has more adverse effects than blaming changeable aspects of one's behavior (Malcarne et al., 1995), we predicted that affective distress out to 1 year postdiagnosis would be predicted only by characterological self-blame at prior points in time; (c) finally, consistent with previous research (Malcarne et al., 1995), we predicted that the association between self-blame and affective distress would be bidirectional such that increased symptoms of anxiety and depression would also predict endorsement of self-blame over time.

Method

Participants

Participants were 76 women with newly diagnosed breast cancer who were part of a larger sample in a longitudinal study of individual coping and adjustment to breast cancer ($N = 110$). Inclusion in the present study was based on availability of complete data on all measures at three assessments over 6 months. Patients had a mean age of 54.8 years ($SD = 9.8$) and a mean of 14.4 years of education ($SD = 3.2$). Sixty-eight percent were either married or living with a partner, 11% were single, 9% were divorced, and 12% were widowed. Diagnoses included invasive ductal carcinoma (64.5%), invasive lobular carcinoma (11.8%), ductal carcinoma in situ (10.5%), mucinous carcinoma (3.9%), lobular carcinoma in situ (1.3%), and tubular carcinoma (1.3%); 6.6% had unspecified diagnoses. Sixty-two percent of patients were diagnosed with Stages 0-I breast cancer, 28% with Stage II, 9% with Stage III, and 1% with Stage IV. Representative of the region of northern New York State and northern New England from which the sample was drawn, 89.5% of the sample was Caucasian. Sixty-eight percent of the patients received radiation therapy, 34% chemotherapy, and 40% hormonal therapy.

Comparisons were made between the 76 patients included in the present analyses and the 34 patients for whom partial data were missing. Patients who remained in the study and those who had missing data did not differ on disease (stage), demographics (age, education), or psychological characteristics (self-blame, symptoms of anxiety and depression). Thus, the sample included in the present analyses is representative of the full sample who originally volunteered for the study. At 1 year following diagnosis, 64 of the original subsample of 76 women returned questionnaires on affective distress. This sample of women did not differ from the original subsample on any of the dimensions listed above.

Procedure

Participants were recruited from the Breast Care Center of Fletcher Allen Health Care (affiliated with the Vermont Cancer Center) in Burlington, Vermont. Patients were approached about participation near the time of diagnosis by a member of the medical staff, and a research assistant followed up to obtain informed consent from interested participants. Approximately 85% of eligible patients volunteered for the study. Each participant completed a structured interview (in person or by phone) as well as written questionnaires assessing psychological variables within 10 days of diagnosis (mean time from diagnosis to interview was 10.8 days, $SD = 8.5$). Full follow-up assessments were conducted at 3 months and 6 months postdiagnosis. At 1 year after diagnosis, only symptoms of anxiety and depression were assessed.

Measures

Structured interview. A structured interview was developed for this study to collect information on patient demographics and other variables (e.g., self-blame attributions). Portions of this interview were based on prior research on the psychological adjustment of cancer patients (Compas et al., 1994; Taylor et al., 1984). Trained interviewers administered the protocol and recorded participants' responses. Embedded in the structured interview were questions about both behavioral and characterological self-blame. Questions were presented as follows.

> "We have found that some people blame themselves for their cancer and some people don't blame themselves at all. I'd like to ask you two questions about whether, and how much you blame yourself for your cancer. (1) How much do you blame yourself for the kinds of things you did, that is, for any behaviors that led to your cancer? (2) How much do you blame yourself for the kind of person you are, that is, for being the kind of person who has things like cancer happen to them?"

Both questions were answered on a 4-point Likert scale, with 1 = *not at all,* 2 = *somewhat,* 3 = *very much,* and 4 = *completely.* Ratings of behavioral and characterological self-blame were moderately and significantly correlated at all three assessments ($r = .34$ at diagnosis; $r = .62$ at 3 months; $r = .52$ at 6 months; all $ps < .01$).

As a validity check for these single-item indices of self-blame, correlational analyses were performed with the Self-Criticism subscale of the Coping Strategies Inventory (CSI) used in the larger study from which this sample was drawn (Tobin, Holroyd, Reynolds, & Wigal, 1989). This subscale measures the extent to which patients assume responsibility and chastise themselves for having a diagnosis of breast cancer. Sample items include "I criticized myself for what happened"; "I told myself how stupid I was"; and "I kicked myself for letting this happen." Both behavioral and characterological self-blame were significantly correlated with this index of self-criticism at all three time points. For behavioral self-blame, the correlations were $r = .45$ ($p < .001$) at diagnosis, .31 ($p < .01$) at 3 months, and .52 ($p < .001$) at 6 months. For characterological self-blame, the correlations were $r = .25$ ($p < .05$) at diagnosis, $r = .43$ ($p < .001$) at 3 months, and $r = .36$ ($p < .01$) at 6 months.

Affective distress. Symptoms of emotional distress were measured by the Symptom Checklist–90—Revised (SCL-90-R; Derogatis et al., 1983). The SCL-90-R is a 90-item self-report measure assessing symptoms of emotional distress. The questionnaire has well-established internal consistency, test–retest reliability, and discriminant validity. For this study, the anxiety and depression scales were combined and used as an index of patients' overall emotional distress. These two scales were chosen because they reflect overall psychological distress or negative affect (Clark &

Watson, 1991), because mixed symptoms of anxiety and depression are the best index of overall emotional distress in a medically ill population (Katon & Roy-Byrne, 1991), and because they are relatively distinct from symptoms that typically occur as a direct result of cancer, cancer treatment, or both. The two scales can be converted to normalized *T* scores on the basis of normative data from a community sample of adult women reported by Derogatis et al. The means of the anxiety and depression *T* scores are presented in Table 1 to provide a normative comparison for the present sample (raw scores were used in all statistical analyses). Internal consistency reliabilities for the combined anxiety and depression scales in the present sample were $\alpha = .94$ at diagnosis, .93 at 3 months, .95 at 6 months, and .94 at 1 year after diagnosis. The anxiety and depression scales were significantly correlated in the present sample: $r = .80$ at diagnosis, .81 at 3 months, .80 at 6 months, and .85 at 1 year after diagnosis.

Medical variables. Medical chart reviews provided data on cancer diagnoses and staging. The stage of breast cancer was determined by tumor size, lymph node involvement, and whether or not it had spread to other sites (American Joint Committee on Cancer, 1992).

Results

The relationship between self-blame and affective distress was investigated through correlations and multiple regression analyses. Analyses were both cross-sectional (at diagnosis, 3 months, and 6 months postdiagnosis) and prospective, predicting affective distress at 3 months, 6 months, and 1 year after diagnosis from self-blame attributions at diagnosis, 3 months, and 6 months, respectively. In all prospective analyses, prior symptoms of anxiety and depression were controlled for.

Descriptive Analyses

Means and standard deviations for the psychological variables measured at each time point are displayed in Table 1. The overall mean anxiety and depression symptom *T* score was 58.6 at diagnosis, 54.4 at 3 months, 53.1 at 6 months, and 52.6 at 1 year. The percentage of patients reporting levels of affective symptomatology in the clinical range (i.e., greater than the 90th percentile) indicated that two to three times as many women scored in the clinical range as would be expected in a community sample. The mean ratings of behavioral and characterological self-blame fell between 1 (*not blaming oneself at all*) and 2 (*somewhat blaming oneself*). The relatively low rate of endorsement of self-blame in the present sample is comparable to that

Table 1
Means and Standard Deviations of Variables at Each Time Point

Variable	Diagnosis		3 months		6 months		1 year	
	M	SD	M	SD	M	SD	M	SD
Characterological self-blame	1.3	.59	1.2	.45	1.3	.52	—	
Behavioral self-blame	1.4	.78	1.3	.50	1.3	.59	—	
Affective symptoms (*T* scores)	58.6	8.55	54.4	9.44	53.1	9.78	52.6	9.65
% in clinical range for anxiety	41		18		21		16	
% in clinical range for depression	34		30		26		19	

Note. Dashes indicate data were not collected.

Table 2

Correlations of Self-Blame Variables With Anxiety and Depression Symptoms at Each Measurement Time Point

Self-blame variable	Diagnosis	3 months	6 months	1 year
Behavioral at diagnosis	.39***	.19	.26*	.27*
Behavioral at 3 months	.32**	.49***	.47***	.49***
Behavioral at 6 months	.36**	.32**	.49***	.33**
Character at diagnosis	.26*	.32**	.09	.27*
Character at 3 months	.41***	.53***	.66***	.58***
Character at 6 months	.38***	.34**	.32**	.38**

$*p < .05.$ $**p < .01.$ $***p < .001.$

reported in other studies of self-blame in cancer patients (e.g., Gotay, 1985; Houldin, et al. 1996; Malcarne, et al. 1995). Although these distributions were skewed, there were sufficient numbers of patients who rated their self-blame from 2 (*somewhat*) to 4 (*completely*) to provide adequate range for conducting the correlations and regressions (25% to 32% of the scores for behavioral self-blame fell in this range; 18% to 21% of the scores for characterological self-blame fell in this range). Specifically, for behavioral self-blame the numbers of patients endorsing scores of 2 or greater were 19 at Time 1, 24 at Time 2, and 20 at Time 3. For characterological self-blame, the numbers of patients scoring 2 or greater were 14 at Time 1, 16 at Time 2, and 16 at Time 3. This suggests a sufficient range of scores to allow these variables to correlate with the criterion (anxiety and depression symptoms).

Correlational Analyses

Correlational analyses were conducted to examine the bivariate association between self-blame variables and anxious and depressive symptoms. As depicted in Table 2, the correlations between both types of self-blame and affective symptoms were consistently moderate to high ($rs = .26$ to $.66, p < .05$). Thus, in the first 6 months after breast cancer diagnosis, there was a consistent bivariate association between both behavioral and characterological self-blame and symptoms of anxiety and depression.

Multiple Regression Analyses

As depicted in Tables 3, 4, and 5, a series of regression equations were constructed to examine the relationship between self-blame and symptoms of anxiety and depression in the first year after breast cancer diagnosis. In all analyses, age, stage, and level of education were controlled for, and characterological and behavioral self-blame were simultaneously entered into the equation to control for shared variance. Because of the moderate correlations between the measures of behavioral and characterological self-blame and the associated problem of multicollinearity of the predictors, the regression analyses were also run with each type of self-blame entered separately. Any differences between the analyses, with the variables entered together versus separately, are noted. Furthermore, in all cross-sectional analyses at 3 and 6 months and prospective analyses predicting

Table 3

Regressions Predicting Anxiety and Depression Symptoms Cross-Sectionally From Self-Blame Variables

Variable	β	sr^2	p
Anxiety and depression at diagnosis[a]			
Age	−.28	.08	.01
Stage	−.06	.00	ns
Education	−.03	.00	ns
Characterological self-blame	.18	.03	ns
Behavioral self-blame	.32	.09	.01
Anxiety and depression at 3 months[b]			
Anxiety and depression at diagnosis	.33	.08	.01
Age	−.05	.00	ns
Stage	.12	.01	ns
Education	−.16	.03	.07
Characterological self-blame	.25	.04	.03
Behavioral self-blame	.21	.03	.07
Anxiety and depression at 6 months[c]			
Anxiety and depression at diagnosis	.45	.15	.01
Age	.08	.00	ns
Stage	.02	.00	ns
Education	−.23	.05	.01
Characterological self-blame	−.02	.00	ns
Behavioral self-blame	.35	.08	.01

[a]$F(5, 75) = 4.67, p < .001; R^2 = .20.$ [b]$F(6, 25) = 10.47, p < .001; R^2 = .43.$ [c]$F(6, 75) = 10.03, p < .001; R^2 = .42.$

symptoms of anxiety and depression, level of affective distress near time of diagnosis was entered as a control variable. Similarly, self-blame near diagnosis was entered as a control variable in all prospective analyses predicting self-blame.

Table 4

Regressions Predicting Anxiety and Depression Symptoms Prospectively From Self-Blame Variables

Variable	β	sr^2	p
Anxiety and depression at 3 months[a]			
Anxiety and depression at diagnosis	.48	.17	.01
Age	−.07	.00	ns
Stage	.16	.02	ns
Education	−.15	.02	ns
Characterological self-blame at diagnosis	.20	.03	.06
Behavioral self-blame at diagnosis	−.10	.01	ns
Anxiety and depression at 6 months[b]			
Anxiety and depression at diagnosis	.33	.08	.01
Age	.01	.00	ns
Stage	−.03	.00	ns
Education	−.24	.05	.01
Characterological self-blame at 3 months	.47	.12	.01
Behavioral self-blame at 3 months	.09	.01	ns
Anxiety and depression at 12 months[c]			
Anxiety and depression at diagnosis	.42	.13	.01
Age	.16	.02	ns
Stage	.21	.04	.03
Education	−.13	.02	ns
Characterological self-blame at 3 months	.29	.04	.03
Behavioral self-blame at 3 months	.13	.01	ns

[a]$F(6, 75) = 6.77, p < .001; R^2 = .32.$ [b]$F(6, 75) = 16.77, p < .001; R^2 = .56.$ [c]$F(6, 63) = 12.87, p < .001; R^2 = .53.$

Table 5
Regressions Predicting Self-Blame Prospectively From Anxiety and Depression Symptoms

Variable	β	sr^2	p
Characterological self-blame at 3 months[a]			
Characterological self-blame at diagnosis	.02	.00	ns
Age	.04	.00	ns
Stage	.11	.01	ns
Education	.03	.00	ns
Anxiety and depression at diagnosis	.41	.14	.01
Behavioral self-blame at 3 months[b]			
Behavioral self-blame at diagnosis	.17	.02	ns
Age	−.08	.01	ns
Stage	.08	.01	ns
Education	.07	.01	ns
Anxiety and depression at diagnosis	.23	.04	.07
Characterological self-blame at 6 months[c]			
Characterological self-blame at diagnosis	.08	.01	ns
Age	.07	.01	ns
Stage	−.00	.00	ns
Education	.11	.01	ns
Anxiety/depression at 3 months	.36	.10	.01
Behavioral self-blame at 6 months[d]			
Behavioral self-blame at diagnosis	.07	.00	ns
Age	−.18	.03	ns
Stage	−.01	.00	ns
Education	.07	.01	ns
Anxiety and depression at 3 months	.29	.07	.02

[a]$F(5, 70) = 3.01, p < .05; R^2 = .18.$ [b]$F(5, 70) = 2.26, p < .058; R^2 = .14.$ [c]$F(5, 70) = 2.28, p < .06; R^2 = .14.$ [d]$F(5, 70) = 2.37, p < .05; R^2 = .14.$

Cross-sectional analyses. At diagnosis, the regression equation was significant in predicting anxiety and depression symptoms, accounting for 20% of the variance. Level of distress was predicted by behavioral self-blame; greater behavioral self-blame was predictive of more anxiety and depression symptoms, accounting for 9% unique variance. Characterological self blame was not significantly associated with affective symptoms. When behavioral ($\beta = .38$, $sr^2 = .14$) and characterological self-blame ($\beta = .28$, $sr^2 = .08$) were entered separately, both were significant predictors of anxiety and depression symptoms.

At 3 months, the regression equation was again significant in predicting emotional distress, accounting for 43% of the variance. Characterological self-blame emerged as a significant predictor; greater characterological self-blame predicted more anxiety and depression symptoms, accounting for 4% unique variance. Additionally, behavioral self-blame approached significance in positively predicting affective symptoms ($\beta = .21$, $sr^2 = .03$, $p = .07$). When entered separately, both behavioral ($\beta = .35$, $sr^2 = .11$) and characterological ($\beta = .38$, $sr^2 = .12$) self-blame were significant predictors of anxiety and depression symptoms.

At 6 months postdiagnosis, the regression equation was again significant in predicting anxiety and depression symptoms, accounting for 42% of the variance. Characterological self-blame dropped out as a significant predictor, whereas behavioral self-blame reemerged as a significant predictor; greater behavioral self-blame predicted more anxiety and depression symptoms, accounting for 8% unique variance. When the self-blame variables were entered in separate equations, only behavioral self-blame ($\beta = .34$, $sr^2 = .10$) was significant.

Prospective analyses. At 3 months postdiagnosis, the regression equation was significant in predicting emotional distress from self-blame at diagnosis, accounting for 32% of the variance. Although neither type of self-blame at diagnosis significantly contributed uniquely to this equation, characterological self-blame approached significance; greater characterological self-blame at diagnosis nearly predicted greater anxiety and depression symptoms at 3 months ($\beta = .20$, $sr^2 = .03$, $p = .055$). When entered in separate equations, only characterological self-blame approached significance in predicting later affective symptoms ($\beta = .18$, $sr^2 = 03$, $p = .08$).

A second regression was constructed to investigate whether attributions of self-blame at 3 months postdiagnosis predicted affective distress at 6 months. This regression equation was significant, accounting for 56% of the variance. Characterological self-blame uniquely and significantly contributed to this equation, explaining 12% of the variance. Greater characterological self-blame at 3 months predicted greater anxiety and depression symptoms at 6 months. When the self-blame variables were entered in separate equations, both behavioral ($\beta = .34$, $sr^2 = .10$) and characterological ($\beta = .52$, $sr^2 = .22$) self-blame were significant predictors of later distress.

Three additional regressions were constructed to investigate whether attributions of self-blame at diagnosis, 3 months, or 6 months predicted affective distress at 1 year after diagnosis. Characterological self-blame at 3 months proved to be a significant predictor of anxiety and depression symptoms at 1 year postdiagnosis. The overall regression equation was significant, accounting for 53% of the variance, with characterological self-blame uniquely accounting for 4% of this variance. Thus, greater characterological self-blame at 3 months postdiagnosis (but not at diagnosis or at 6 months postdiagnosis) significantly predicted greater anxiety and depression symptoms at the 1-year follow-up. Both characterological self-blame ($\beta = .37$, $sr^2 = .10$) and behavioral self-blame ($\beta = .30$, $sr^2 = .07$) were significant when the variables were entered separately.

A separate set of regression equations was constructed to investigate whether symptoms of anxiety and depression at diagnosis and at 3 months predicted attributions of self-blame at 3 months and 6 months, respectively. The regression equation predicting characterological self-blame at 3 months was significant, accounting for 18% of the variance. Anxiety and depression symptoms uniquely accounted for 14% of this variance; greater affective distress at diagnosis predicted more endorsement of characterological self-blame at 3 months. The regression equation predicting behavioral self-blame at 3 months approached significance, accounting for 14% of the variance ($p = .058$). Anxiety and depression symptoms uniquely accounted for 4% of this variance ($p = .07$); greater affective distress at diagnosis marginally predicted more endorsement of behavioral self-blame at 3 months.

The regression equation predicting characterological self-blame at 6 months was marginally significant, accounting for 14% of the variance ($p = .06$). Anxiety and depression symptoms uniquely accounted for 10% of this variance; greater affective distress at 3 months predicted more endorsement of characterological self-blame at 6 months. The regression equation predicting behavioral self-blame at 6 months was significant, accounting for 14% of the variance. Anxiety and depression symptoms uniquely accounted for 7% of this variance; greater affective distress at 3 months marginally predicted more endorsement of behavioral self-blame at 6 months.

Discussion

Attributions of self-blame were related to poorer psychological adjustment during the first year following diagnosis and at initial treatment for breast cancer. In cross-sectional analyses, both characterological and behavioral self-blame were correlated with increased symptoms of anxiety and depression at diagnosis, 3 months, and 6 months postdiagnosis. This basic association did not change over the first several months of adjustment to breast cancer. Cross-sectional regression analyses indicated that at diagnosis, behavioral self-blame predicted anxiety and depression symptoms; at 3 months, characterological self-blame predicted affective distress and behavioral self-blame approached significance; and at 6 months, behavioral self-blame was the only unique predictor of affective symptoms. Prospectively, behavioral self-blame did not predict changes in anxiety and depression symptoms at any time point, whereas characterological self-blame at diagnosis approached significance in predicting emotional distress at 3 months and was a strong predictor of distress at 6 months and at 1 year postdiagnosis. These findings were somewhat modified when the two types of self-blame were entered into the regression analyses separately; characterological self-blame was also a predictor of distress cross-sectionally at diagnosis, and behavioral self-blame was a predictor in the prospective analyses at 6 and 12 months. Prior levels of anxiety and depression symptoms were found to be significant (or marginally significant) predictors of both behavioral and characterological self-blame at 3 and 6 months.

These findings extend our understanding of self-blame attributions in breast cancer patients in several ways. First, although, independently, both behavioral and characterological self-blame were strongly correlated with symptoms of anxiety and depression, when entered simultaneously in regression analyses, behavioral self-blame more consistently predicted distress cross-sectionally, and characterological self-blame more consistently predicted distress prospectively. In the only other prospective study of self-blame in cancer patients, Malcarne et al. (1995) similarly found that only characterological self-blame near the time of diagnosis predicted distress 4 months later. The present study extends this research by demonstrating the predictive power of characterological self-blame out to 1 year postdiagnosis. Thus, characterological self-blame appears to have pernicious long-term effects on psychological adjustment to

breast cancer, whereas behavioral self-blame seems maladaptive in the moment. This interpretation is qualified by the moderate correlations between behavioral and characterological self-blame as measured here; when the variables were entered into the regression equations simultaneously, they were primarily competing for shared variance, and differences between the effects for the two predictors must be interpreted cautiously. In general, it appears that both behavioral and characterological self-blame are related to increases in symptoms of psychological distress.

Second, contrary to prior research and theory, (Janoff-Bulman, 1992; Timko & Janoff-Bulman, 1985), the present study found no support for positive outcomes of behavioral self-blame in breast cancer patients. Consistent with previous research, behavioral self-blame in this study was strongly and positively associated with symptoms of anxiety and depression at each measurement time point (Houldin et al., 1996). Janoff-Bulman (1992) hypothesized that the full effects of self-blame on adjustment may not be realized until several years after the onset of the stressor. It may be that attributions of behavioral self-blame are adaptive at these later points in time; however, evidence from the present and prior research suggests that up to 6 months following a diagnosis of breast cancer, behavioral self-blame is maladaptive.

Finally, building on the theoretical work of Janoff-Bulman (1992) and the empirical findings of Malcarne et al. (1995), the association between self-blame and adjustment is, in part, a reciprocal process. In this study, prior levels of anxiety and depression predicted both characterological and behavioral self-blame, although only characterological self-blame predicted symptoms of anxiety and depression. Thus, there was a true reciprocal relationship between characterological self-blame and distress, whereas the relationship between distress and behavioral self-blame was unidirectional; affective distress predicted attributions of behavioral self-blame, although behavioral self-blame was not predictive of distress.

These data support one component of Janoff-Bulman's two-part hypothesis regarding the function of self-blame in adjustment to threat: We found no evidence for positive adaptational outcomes of behavioral self-blame, but we did find that the effects of characterological self-blame were more negative than the effects of behavioral self-blame. Janoff-Bulman's theory predicts that characterological self-blame will trigger feelings of hopelessness about future protection from harm, whereas behavioral self-blame will enable perceptions of control over future outcomes. In the present study, both types of self-blame were related to increased distress, although characterological self-blame was more problematic in that it predicted worsening distress over time, whereas behavioral self-blame only predicted concurrent distress.

One reason for the consistently negative outcomes of self-blame in this study compared with some previous research with cancer patients may be that self-blame was assessed directly to avoid confusion with related constructs of causality, responsibility, or both. Shaver and Drown (1986) reviewed these concepts in detail and predicted

different emotional outcomes of each. They argued that self-blame should be reserved for intentional actions that bring about harm, provided that there is no satisfactory excuse or justification for the actions taken (Shaver & Drown, 1986). Although a patient may have caused her or his suffering and may bear some responsibility for that negligence, a victim is objectively blameworthy only if she or he intentionally behaved in a manner that produced the suffering. Thus, true self-blame is more than a belief about causality and responsibility; it is a belief that one intentionally or recklessly brought about some negative set of outcomes. The evidence from this and other studies that have directly assessed self-blame suggests that these perceptions are strongly and positively associated with increased affective distress.

There are several limitations of the present study that are worth noting. First, self-blame was not assessed at the 1-year follow-up, preventing an understanding of how distress and self-blame are associated at this time point. Second, from the design of this study, we are unable to understand how self-blame functions several years after the diagnosis has been made. Third, the discriminant validity of the measurement of behavioral and characterological self-blame needs to be examined further, as the two variables were moderately correlated at all assessments. Fourth, the use of self-report measures of both self-blame and symptoms of anxiety and depression is problematic. Future research could include measures of affective distress provided by other informants (e.g., spouses). And finally, because this study resulted from an exclusive focus on breast cancer patients, we cannot draw conclusions about the function of self-blame in other cancer populations.

To prevent confusion and inconsistency in future studies of self-blame, investigators must be conceptually clear in their methods of assessment. Furthermore, research studies would benefit from limiting the focus on specific populations and being consistent in assessing blame attributions at the same point in time after occurrence of the stressful life event. Future research with breast cancer patients should continue to investigate the long-term outcomes of self-blame through longitudinal research designs. Possible mediators of the relationship between perceptions of self-blame and symptoms of anxiety and depression could also be examined. For example, research suggests that the tendency to ruminate (e.g., Nolen-Hoeksema, 1991) and to focus attention on the self (e.g., Ingram, 1990) could account, at least in part, for the adverse effects of self-blame on psychological adjustment. These guidelines will enable a more accurate understanding of the important functions of self-blame in the process of adjustment to life's adversities.

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