

Attribution of Blame, Self-forgiving Attitude and Psychological Adjustment in Women with Breast Cancer

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Abstract The purpose of this study was to examine relationships among self-blame for developing breast cancer, a self-forgiving attitude, mood, and quality of life among women with breast cancer. In this cross-sectional study, 123 women with Stages 0–III breast cancer completed questionnaires measuring demographic and medical characteristics, self-blame, self-forgiveness, mood, and quality of life. Women who blamed themselves reported more mood disturbance ($p \leq .001$) and poorer quality of life ($p < .001$) than those who did not blame themselves. Mediation analyses revealed that self-blame for cancer partially mediated the relationships between a self-forgiving attitude and both mood disturbance and quality of life ($Z = -2.72$, $p = .006$ and $Z = -2.89$, $p = .004$, respectively). Patients may benefit from a discussion with their

oncologists and other healthcare providers about self-forgiveness and the potential benefits of reducing self-blame to facilitate adjustment to breast cancer.

Keywords Self-blame · Self-forgiveness · Breast cancer · Psychological adjustment

Introduction

Attribution of blame is an important but understudied factor in adjustment to cancer (Faller et al. 1995; Glinder and Compas 1999; Servaes et al. 2002). Research with cancer patients (e.g., Costanzo et al. 2005; Stewart et al. 2001) as well as clinical observation (Block et al. 2006) have demonstrated that many individuals attribute their cancer to a variety of personal factors (e.g., dietary habits, negative emotions, or stress). Because there is insufficient evidence to support any one causal factor in breast cancer, the accuracy of women's attributions remains unknown. However, studies of patients whose cancers have better known causes (e.g., lung cancer) suggest that self-attributions are generally harmful (Berckman and Austin 1993; Faller et al. 1995) and may lead to depression, anxiety and impaired quality of life (Block et al. 2006; Houldin et al. 1996; Peterson et al. 1981; Servaes et al. 2002).

Many researchers (e.g., Janoff-Bulman 1979) have divided self-blame into two constructs: behavioral (attributing blame for a situation to one's past behaviors) and characterological (negative feelings and poor adjustment because of personality characteristics that typically are stable and resist change). Janoff-Bulman (1979, 1992) asserted that when people engage in behavioral self-blame and believe that the behaviors responsible can be changed, their perception of control over future events is improved,

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as is their adjustment to the stressful situation. For example, Timko and Janoff-Bulman (1985) found that behavioral self-blame increased feelings of invulnerability to breast cancer recurrence, which in turn decreased depressive symptoms. Other researchers' results have not been consistent with this, however, possibly due to the way in which self-blame was conceptualized and measured (Glinder and Compas 1999). For example, Malcarne et al. (1995) found that initial levels of both behavioral and characterological self-blame were not related to distress in a sample of mixed cancer patients immediately after diagnosis. However, initial characterological self-blame predicted psychological distress 4 months later, as did the interaction of characterological and behavioral self-blame. Additionally, Costanzo et al. (2005), examining attributions and distress in women with gynecologic cancer, found that stronger attributions for the onset of cancer were associated with greater distress. Engaging in behaviors believed to reduce risk of recurrence was associated with less distress.

In an effort to examine these constructs with greater methodological rigor, Glinder and Compas (1999), in a longitudinal study of women with breast cancer, found that behavioral self-blame was associated with increased affective symptoms at diagnosis, and characterological self-blame was associated with increased affective symptoms over time. Bennett et al. (2005), in a prospective study of women newly diagnosed with breast cancer, found that both behavioral and characterological self-blame were related to anxiety and depression at 4, 7, and 12 months following diagnosis, and that perceived control did not mediate these relationships. In summary, although some studies have revealed benefits of behavioral self-blame (particularly if this prompts healthy behavior changes), the majority of evidence suggests that both behavioral and characterological self-blame negatively affect adjustment to cancer.

Although positive adjustment generally is associated with the ability to avoid self-blame, researchers have neglected those factors that may predispose individuals to blame themselves for cancer. Having a self-forgiving attitude, or the ability to accept responsibility without assuming undue guilt, may be one such factor. Self-forgiving people acknowledge their mistakes but give up self-resentment and self-criticism (Enright et al. 1996). Although the potential benefits of self-forgiveness remain largely unstudied (Hall and Fincham 2005), Romero et al. (2006) found, in a sample of predominantly African American and Hispanic women in a public sector breast clinic, that a self-forgiving attitude was related to psychological adjustment to breast cancer, a relationship that may reflect a process whereby women who are more self-forgiving are less likely to blame themselves for

developing cancer, which in turn affects their mood and quality of life.

The objective of the current cross-sectional study was to examine relationships among self-blame (for developing breast cancer and/or what could affect the course of cancer in the future), self-forgiving attitude, mood disturbance, and quality of life among women with breast cancer. We conceptualized self-blame as the attribution of the onset and/or course of one's cancer to one's own negative behaviors, thoughts, feelings, and experiences. Although this is similar to the concept of behavioral self-blame, we focused more explicitly on factors to which individuals may attribute cancer (as in Costanzo et al.'s 2005 study). We conceptualized self-forgiving attitude as a more global predisposition to avoid undue guilt and shame across multiple situations. We hypothesized that a self-forgiving attitude would be related negatively to mood disturbance and positively to quality of life. We also hypothesized that these relationships would be mediated by self-blame for breast cancer.

Methods

Participants and Procedures

The Baylor College of Medicine Institutional Review Board approved the study and consent procedures. Participants were 123 women attending a breast clinic. Eligibility criteria included being female, having breast cancer (Stages 0–III) and being able to read and understand English. Patients were asked by their physicians to complete a battery of questionnaires assessing adjustment to breast cancer. To protect patient confidentiality and because of the busy nature of the clinic, physicians did not record the number of patients who declined to participate and were unable to provide data on those patients. There was only one contact with each participant. Data collection was conducted over a 6-week period.

Measures

Questionnaires assessed demographic characteristics (age, race/ethnicity, marital, and educational status), time since diagnosis, self-forgiving attitude, attribution of self-blame, mood disturbance, and quality of life. Questionnaires took approximately 15 min to complete.

Self-forgiving Attitude

The Forgiveness of Self (FOS) scale (Mauger et al. 1992) is a 15-item scale that assesses attitudes and practices

related to the global tendency to forgive one's self. The items focus on guilt feelings over transgressions and sinful or negative self-perceptions. Participants endorsed the degree to which they agreed with each item on a 6-point Likert-type scale (1 = *Strongly Disagree*; 6 = *Strongly Agree*). The wording of most items was in the direction of higher scores meaning less forgiveness (e.g., "I find it hard to forgive myself for some things that I have done," "I often feel like I have failed to live the right kind of life" and "I frequently apologize for myself"). We reverse-scored these items for ease of interpretation of the results so that a higher score would indicate a greater self-forgiving attitude. Adequate validity and test–retest reliability have been demonstrated (Mauger et al. 1992). The internal reliability (Cronbach's alpha) of this measure in the current study was .87.

Self-blame

To assess self-blame, we created a questionnaire including items from Nosarti et al.'s (2002) Beliefs About Breast Cancer Questionnaire, Stewart et al.'s (2001) items and a slightly modified version of Glinder and Compas's (1999) behavioral self-blame item. The purpose of creating this measure was to assess in greater detail the types of things to which women attribute breast cancer as well as degree of self-blame. We asked participants to rate on a 4-point Likert-type scale (1 = *Not at All*; 4 = *Completely*) the extent to which they believed each of 11 items was responsible for the development of their cancer and/or could affect the course of their cancer in the future. Higher scores indicated greater self-blame, and a score of 2 or higher on any item was considered endorsement of that factor as having contributed to cancer. Examples of items included, "Not eating right," "Lack of exercise" and "Placing high demands on myself." Although validity data have not yet been collected, reliability was good in the current study (Cronbach's alpha = .79).

Mood Disturbance

We used the short version of the Profile of Mood States (POMS-SF) (Shacham 1983) to measure mood disturbance. This 37-item instrument has six subscales measuring both positive and negative emotional states. Participants endorsed the degree to which they had experienced each emotion in the past week on a 5-point Likert-type scale (0 = *Not at All*; 4 = *Extremely*). We reverse-scored the positive emotional state items and then summed all items for a mood disturbance score, with higher scores indicating more mood disturbance. Reliability and convergent and discriminant validity for the POMS-SF have been

satisfactorily established (Baker et al. 2002). The internal consistency (Cronbach's alpha) of this measure in the current study was .96.

Quality of Life

We used the Functional Assessment of Chronic Illness Therapy—Breast version (FACIT-B) scale (Cella 1997) to measure quality of life. This 27-item scale has four subscales measuring physical, social/family, emotional, and functional well-being and nine additional items assessing breast-specific well being. These items are summed to provide a global measure of quality of life. Participants endorsed the degree to which each item had been true for them during the past 7 days, using a 5-point Likert-type scale (0 = *Not at all*; 4 = *Very much*). We used the total quality of life score, with higher scores indicating better quality of life. This widely used measure has excellent reliability and validity. The internal consistency (Cronbach's alpha) of this measure in the current study was .92.

Statistical Analyses

Statistical analysis was done in three stages. First, descriptive statistics were computed for self-blame, self-forgiving attitude, mood disturbance, and quality of life. Next, bivariate correlations were computed to examine relationships among the demographic, medical, independent (self-blame and self-forgiving attitude) and dependent (mood disturbance and quality of life) variables. Multiple regression analyses were used to test the mediational models. Mood and quality of life were modeled separately. We also examined the relationships between demographic and medical characteristics (age, education, marital status, employment status, length of time since diagnosis) and mood and quality of life in order to determine whether to control for these variables in the mediational analyses.

Results

Participants

Patients' mean age was 56.2 years. The majority of the participants (76%) were Caucasian, 14% African American, 6% Hispanic, 2% Asian American, and 2% Native American. Mean number of years of education was 15.1, with about 79% of the sample completing at least some college. The average time since diagnosis was 35.9 months (range = 1–180 months). Table 1 shows complete demographic and medical data obtained for this sample.

Table 1 Descriptive characteristics for demographic, medical, independent and dependent variables

Variable	Mean	SD	Range
Age (years)	56.2	11.5	27–83
Education (years)	15.1	2.6	11–24
Time since diagnosis (months)	35.9	33.5	1–180
Self-blame	18.0	5.3	11–34
Self-forgiving attitude (FOS)	72.3	11.1	35–90
Mood disturbance (POMS)	31.5	22.4	0–116
Quality of life (FACIT-B)	115.3	18.6	57–144
Race/ethnicity	<i>N</i>		Percentage
Caucasian	94		76
African American	17		14
Hispanic	7		6
Asian American	3		2
Native American	2		2
Marital status			
Single	10		8
Married	85		69
Divorced	18		15
Widowed	10		8
Education			
High school/GED	26		21
Some college	30		25
College graduate	66		54
Employed (yes)	61		50

FOS, Forgiveness of Self; POMS, Profile of Mood States; FACIT-B, Functional Assessment of Chronic Illness Therapy—Breast

Descriptive Statistics

Means, standard deviations and ranges of the scores for the independent (age, time since diagnosis, attribution of blame, and self-forgiving attitude) and dependent (mood disturbance and quality of life) variables are presented in Table 1. The order in which self-blame items were endorsed was lack of exercise (65%), not eating right (61%), difficulty coping with stress (52%), decision to take hormone replacement therapy (51%), placing high demands on self (50%), anxiety/nervousness (45%), decision to use oral contraception (37%), not expressing feelings (37%), delay in seeking medical consultation (31%), alcohol use (23%), and pessimism (21%). Patients' mean mood disturbance score was 31.5 ($SD = 22.4$), similar to that obtained from a sample of recently diagnosed (pre-treatment) cancer patients with varied malignancies (Cella et al. 1989); and mean quality of life score (115.4; $SD = 18.6$) was comparable to that from another sample of cancer patients, also with varied malignancies (Cella 1997). Our sample of patients did not report considerable levels of mood disturbance or impaired levels of quality of life compared to

other cancer patients. Our patients reported a more self-forgiving attitude compared to a sample of breast cancer patients in a public sector setting (Romero et al. 2006).

Bivariate Analyses

Table 2 presents the Pearson correlation coefficients among the independent and dependent variables. Age, education, and time since diagnosis were not related to mood disturbance or quality of life ($p > .05$). Participants who reported more self-blame reported more mood disturbance ($p < .001$) and poorer quality of life ($p < .001$). Participants who reported a more self-forgiving attitude reported less mood disturbance ($p < .001$) and a better quality of life ($p < .001$). Participants who reported a more self-forgiving attitude also reported less self-blame for cancer ($p < .001$). These relationships are consistent with our hypotheses.

Between-group Comparisons

Since it is possible that our demographic variables could differentially relate to our dependent measures (e.g., marital status serving as a proxy for social support), we compared the psychological functioning (mood and quality of life) of participants who were married and not married and employed and not employed (Table 3). One-way analysis of variance was performed to examine between-group differences. Women who were married reported less mood disturbance and a more self-forgiving attitude than those who were not married ($F[1,121] = 4.11$, $p = .45$ and $F[1,121] = 8.61$, $p = .004$, respectively). There were no between-group differences for employment status.

Mediation Analysis

In order to examine whether self-blame for breast cancer mediated the relationship between self-forgiving attitude and psychological adjustment, a series of multiple regression analyses were performed. Although our demographic and medical variables (study covariates) were not related to our outcome measures, we computed the regression analyses with and without the study covariates. Since the results were the same, we did not include the study covariates in our mediation analyses.

To demonstrate mediation, the following is required: (a) the independent variable (self-forgiving attitude) must be related to the dependent variable (mood disturbance and quality of life) when the mediator (self-blame) is not present, (b) the independent variable (self-forgiving attitude) must be related to the mediator (self-blame), (c) the mediator (self-blame) must be related to the dependent variable (mood disturbance and quality of life), and (d)

Table 2 Pearson product-moment correlation coefficients

Variable	Age (1)	Education (2)	Time (3)	Self-blame (4)	FOS (5)	POMS (6)	FACIT-B (7)
1	–	–.02	.17	–.19*	.15	–.11	.09
2		–	–.01	–.05	.14	–.11	.08
3			–	–.02	.05	.02	.08
4				–	–.46***	.44***	–.43***
5					–	–.49***	.42***
6						–	–.80***

FOS, Forgiveness of Self; POMS, Profile of Mood States; FACIT-B, Functional Assessment of Chronic Illness Therapy—Breast

* $p < .05$; *** $p < .001$

there must be a significant drop in the previous correlation between the independent and dependent variables when the mediator is included in the model (Aiken and West 1991; Baron and Kenny 1986; Holmbeck 1997). Mood and quality of life were modeled separately. Since age, marital status, education, and time since diagnosis were not significantly related to mood disturbance or quality of life in our multivariate analyses, these variables were not included in the models. We used Sobel’s test (1982) to measure the extent to which self-blame mediates the relationships between a self-forgiving attitude and mood disturbance and quality of life.

Mood Disturbance

First, regression analyses showed that self-forgiving attitude was negatively related to mood disturbance ($\beta = -.49$; $p < .001$). Next, we examined the relationship between self-forgiving attitude and self-blame for breast cancer. Regression analyses showed that self-forgiving attitude was negatively related to self-blame ($\beta = -.46$; $p < .001$). To test for mediation of the relationship between self-forgiving attitude and mood disturbance by self-blame, the latter was added to the equation, which remained significant, $F(2,120) = 25.66$, $p < .001$. Self-blame was significantly related to mood disturbance and the beta weight for self-forgiving attitude decreased in magnitude ($\beta = -.37$), suggesting partial mediation. To test the significance of this decrease, we used the procedures outlined by Sobel (1982)

which supported the partial mediating effect of self-blame, $Z = -2.72$, $p = .006$. Self-blame accounted for 25% of the covariance in self-forgiving attitude and mood disturbance.

Quality of Life

Regression analyses showed that self-forgiving attitude was positively related to quality of life ($\beta = .42$; $p < .001$). As demonstrated above, self-forgiving attitude was negatively related to self-blame for breast cancer ($\beta = -.46$; $p < .001$). To test for mediation of the relationship between self-forgiving attitude and quality of life by self-blame, the latter was added to the equation. The equation remained significant, $F(2,119) = 19.82$, $p < .001$. Self-blame was negatively related to quality of life and the beta weight for self-forgiving attitude decreased in magnitude ($\beta = .29$), suggesting partial mediation. Results from the Sobel test (1982) supported the partial mediating effect of self-blame, $Z = -2.89$, $p = .004$. Self-blame accounted for 33% of the covariance in self-forgiving attitude and quality of life.

Discussion

The purpose of our study was to examine the relationships between self-blame and self-forgiving attitude and both mood disturbance and quality of life in women with breast cancer. The relationships between a self-forgiving attitude

Table 3 Psychological functioning and marital and employment status

	Married ($n = 85$)		Not married ($n = 38$)		p	Employed ($n = 61$)		Not employed ($n = 62$)		p
	M	SD	M	SD		M	SD	M	SD	
POMS	28.8	21.6	37.6	23.3	.045	30.3	22.2	32.8	22.8	.537
FACIT-B	117.5	18.6	110.6	17.8	.054	117.5	17.5	113.3	19.5	.207
Self-blame	17.8	5.2	18.6	5.5	.499	17.4	5.4	18.7	5.2	.165
FOS	74.3	10.1	68.1	12.3	.004	73.6	10.9	71.1	11.4	.225

FOS, Forgiveness of Self; POMS, Profile of Mood States; FACIT-B, Functional Assessment of Chronic Illness Therapy—Breast

and mood and quality of life replicated Romero et al.'s (2006) findings. We also found a positive relationship between self-blame and mood disturbance and a negative relationship between self-blame and quality of life. These results are consistent with those of other researchers (Bennett et al. 2005; Malcarne et al. 1995; Scharloo et al. 2005) and suggest that, contrary to what some researchers have suggested (Timko and Janoff-Bulman 1985), self-blame does not provide protection against stressful events.

In examining these variables together, we also hypothesized that self-blame for breast cancer would mediate the relationships between a self-forgiving attitude and both mood disturbance and quality of life. Both of these hypotheses were supported. Those who were more self-forgiving in general were less likely to blame themselves specifically for breast cancer and, subsequently, more likely to be well-adjusted to their illness.

Since we did not measure any variables mediating the relationship between self-blame and our dependent measures, we are not able to determine why self-blame was deleterious in our study. It is possible that women who blame themselves for things that they cannot change (e.g., taking hormone replacement therapy in the past) may not be encouraged to engage in risk-reducing behaviors. In contrast, if they blame themselves for things that they could change (e.g., unhealthy eating), they might be prompted to engage in risk-reducing behaviors. Examining what attributions are related to distress might be a future area for research.

A substantial number of the women in our study reported feeling responsible for the development and/or future course of their breast cancer due to a variety of specific behaviors, thoughts, feelings, and experiences. Future studies could study the effects of interventions that incorporate these findings, such as whether encouraging oncologists and nurses to discuss the lack of evidence for any specific personal cause of cancer with their patients helps women to blame themselves less and improves their adjustment.

Our study has several methodological limitations. Our sample was predominantly Caucasian, well-educated and being followed in a private sector breast clinic, which raises the question of whether the relationships found in our study would be found in a more socioeconomically and ethnically diverse sample as well. We also provided limited medical data. However, Bardwell et al. (2006) showed that symptoms of depression in a large sample of women with early stage breast cancer were not associated with cancer-related variables. Our analyses also showed that length of time since diagnosis was not related to our outcome measures. Our measure of self-blame could have been influenced by participants' knowledge of breast cancer risk factors. Nevertheless, even if women had this knowledge,

they might not necessarily blame themselves for developing breast cancer. Also, there was no correlation between educational level (a possible proxy for knowledge) and degree of self-blame. We also have no data on those who declined to participate, and there may be important differences between participants and non-participants. Another limitation is that our study also was cross-sectional, which does not allow us to draw causal interpretations or to evaluate whether the self-forgiving attitude/distress relationship changes over time and whether self-blame remains an important mediator of this relationship. Kraemer et al. (2001) noted the limitations of using mediational analyses in cross-sectional data, where cause cannot be inferred. Other mediational models may be equally applicable, such as mood disturbance leading to an unforgiving attitude toward one's self. Such models, as well as the one we have proposed, remain to be tested longitudinally. Furthermore, because engaging in healthy behaviors may reduce distress about recurrence, future studies should look at attributions for onset and recurrence of breast cancer separately, as was done in Costanzo et al.'s (2005) study of gynecologic cancer survivors.

This study identifies potential areas for clinical interventions to decrease mood disturbance and increase quality of life. Patients who lack a self-forgiving attitude may be at heightened risk for self-blame, and interventions that reduce self-blame and facilitate self-forgiveness could promote better adjustment to this disease. Much of the research examining the efficacy of interventions that facilitate forgiveness has focused on persons who have suffered a hurtful interpersonal offense from which they experience negative emotional consequences (e.g., Harris et al. 2006; Reed and Enright 2006; Rye et al. 2005). In this regard, forgiveness interventions have been shown to reduce anxiety and depression and improve self-esteem (Lin et al. 2004; Rye et al. 2005). Such interventions generally incorporate multiple components, such as perspective-taking and recognizing the humanity of the offender. Only randomized controlled trials will show whether components of interventions focused on forgiveness of others may provide a useful intervention for facilitating a self-forgiving attitude (and thus for reducing self-blame) in women with breast cancer.

Until such interventions are established, discussions between oncologists and breast cancer patients routinely should include a conversation about the multiple causes of breast cancer, to diffuse some women's tendency to blame themselves as the sole cause of their cancer. Furthermore, focusing on what they can do to improve their health and quality of life may help some women by shifting their focus away from ruminating about the causes of cancer and its recurrence. Asking about what or who their patients think is responsible for having developed cancer can open

an important dialog about self-blame and self-forgiveness that may help physicians identify patients who might benefit from referrals for counseling or other interventions to discuss these issues further.

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