

Finding benefit in breast cancer: Relations with personality, coping, and concurrent well-being

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Abstract

Cancer patients experience positive as well as adverse consequences from cancer diagnosis and treatment. The work reported here was part of an effort to characterize the experiences of benefit finding in breast cancer patients. A sample of 230 early-stage breast cancer patients completed a set of benefit finding items in the year post-surgery. This measure was then related to measures of concurrent coping, several aspects of psychosocial well-being, demographic variables, and several other personality traits. Benefit finding related positively to trait optimism, and to positive reframing and religious activity as coping reactions. Benefit finding related inversely to emotional distress, but was relatively unrelated to other measures of well-being.

Keywords: *Quality of life, breast cancer, benefit finding*

Breast cancer patients confront many stressors. The most impactful is the diagnosis itself (Andrykowski, Cordova, Studts & Miller, 1998; Glanz & Lerman, 1992; Stanton & Snider, 1993). However, the medical procedures that follow the diagnosis are also stressful, as are the side-effects of the treatment (Hann, Jacobsen, Martin, Azzarello & Greenberg, 1998; Jacobsen, Bovbjerg & Redd, 1993, 1995; Kaplan, 1994; Longman, Braden & Mishel, 1996). Beyond the physical challenges of treatment, breast cancer patients experience a variety of psychological threats and losses (e.g., Deadman, Dewey, Owens, Leinster & Slade, 1989; Schag et al., 1993).

Improvement in medicine and changes in the psychological climate surrounding cancer have helped blunt the impact of breast cancer and its treatment. In the absence

of any psychiatric history, severe psychiatric symptoms are fairly rare among early stage breast cancer patients (patients with good prognoses), though are more likely among patients with more advanced cancers (for reviews see Glanz & Lerman, 1992; Irvine, Brown, Crooks, Roberts & Browne, 1991; Moyer & Salovey, 1996). The experience of early stage breast cancer is now widely seen as a life crisis with diverse ramifications (Spencer et al., 1999) which is weathered by most patients within about a year post-surgery (Andersen, Anderson & deProse, 1989; Carver et al., 1993).

Although the cancer experience is distressing and disruptive, there is an increasing awareness in both research and clinical communities that there often are aspects of the experience that patients view as positive or beneficial. Many patients report outcomes such as improved personal resources, enhanced sense of purpose, greater spirituality, closer relations with others, and changes in life priorities (e.g., Andrykowski, Brady & Hunt, 1993; Collins, Taylor & Skokan, 1990; Cordova, Cunningham, Carlson & Andrykowski, 2001; Curbow, Legro, Baker, Wingard & Somerfield, 1993; Dow, Ferrell, Leigh, Ly & Gulasekaram, 1996; Fromm, Andrykowski & Hunt, 1996; Ho, Chan & Ho, 2004; Kahn & Steeves, 1993; Kurtz, Wyatt & Kurtz, 1995; Lechner et al., 2003; Stanton et al., 2002; Taylor, Lichtman & Wood, 1984; Weiss, 2002). Though it may seem paradoxical, some patients say that having been diagnosed with cancer has on the whole been a positive experience in their lives.

Such findings join the growing literature in other areas suggesting that traumatic events can yield positive outcomes. The events examined range quite broadly, including bereavement and break-ups, infertility, childhood sexual abuse, adult sexual assault, tornadoes, mass killings, and plane crashes (e.g., Affleck & Tennen, 1996; Davis, Nolen-Hoeksema & Larson, 1998; Frazier, Conlon & Glaser, 2001, 2004; Ickovics & Park, 1998; Lehman et al., 1993; McMillen, Zuravin & Rideout, 1995, 1997; O'Leary & Ickovics, 1995; Park, Cohen & Murch, 1996; Schaefer & Moos, 1992; Tashiro & Frazier, 2003; Tedeschi & Calhoun, 1995, 1996; Tedeschi, Park & Calhoun, 1998; Thompson, 1985). The perception of benefit does not appear to stem from the passage of time since the event – it sometimes occurs quite early (Burt & Katz, 1987; Frazier et al., 2001; Fromm et al., 1996; McMillen et al., 1997). Nor does it reflect simply an absence of distress (Fromm et al., 1996; Park et al., 1996). Indeed, there is even some suggestion that event severity can relate positively to benefit, as though severe events offer the most potential for growth (McMillen et al., 1997).

One reason for the rapid growth of interest in these phenomena is the belief that those who initially find benefit in adversity are better off emotionally later on. There is evidence supporting this position from studies of persons who had experienced strokes (Thompson, 1991), heart attacks (Affleck, Tennen, Croog & Levine, 1987), sexual assault (Frazier et al., 2001), crises with their newborns (Affleck, Tennen & Rowe, 1991), and natural disasters (McMillen et al., 1997). There is also some evidence consistent with this position within the cancer literature (Carver & Antoni, 2004), but there is contradictory evidence as well. Specifically, Tomich and Helgeson (2004) found that initial benefit finding predicted *elevated* distress 9 months later among breast cancer patients. Thus, this question remains under intensive investigation.

What factors promote benefit finding?

Also under intensive investigation is the question of what factors may promote benefit finding (Calhoun & Tedeschi, 1998). This latter question is the focus of

the study reported here. A knowledge of the factors that promote finding benefit in adversity should help provide a clearer picture of what the process of benefit finding consists of (Frazier et al., 2004; Ho et al., 2004).

Information on this subject is starting to accumulate. In studies of patients other than those with cancer, studies have linked benefit finding to trait optimism, trait hope, trait extraversion, and internal locus of control (for review, see Tennen & Affleck, 1999). Tennen and Affleck (1999) raised a concern about the effect of optimism, because a reanalysis of one study suggested that the effect of optimism may have been an artifact of items in the optimism scale that themselves reflect benefit finding. They recommended further examination of the issue, using a newer measure of optimism that omits such item content (Scheier et al., 1994).

In non-patient samples, benefit finding has been related to perceived control (after sexual assault; Frazier, 2003) and to trait agreeableness (after relationship break-up; Tashiro & Frazier, 2003). Tashiro and Frazier (2003) also tested for a relation with trait neuroticism but found none. Benefit finding has again been related to optimism (following bereavement; Davis et al., 1998) and also to religiousness (Park et al., 1996). Relations have also been found between benefit finding and both approach coping and religious coping (after sexual assault; Frazier et al., 2004), and for acceptance, religious coping, and positive reframing (after diverse stressors; Park et al., 1996).

In the cancer literature, there is some indication that benefit finding occurs more among minority women (Tomich & Helgeson, 2004) and patients who are younger (Lechner et al., 2003). Evidence on SES is contradictory: higher benefit finding has been reported among lower SES women (Tomich & Helgeson, 2004), among higher-income women (Cordova et al., 2001), and among women with more education (Sears, Stanton & Danoff-Burg, 2003). There is evidence that higher disease stage induces greater benefit (Tomich & Helgeson, 2004) at least up to Stage II cancers (Lechner et al., 2003), consistent with the idea that stress induces benefit. Also consistent with that interpretation, one study found a positive relation of stress with some measures of benefit finding (Sears et al., 2003); another found a similar relation, but only if the cancer experience met the criteria for post-traumatic stress disorder (Cordova et al., 2001).

Helgeson et al. (2004) found that benefit-finding related to an index of personal resources that included good body image, self-esteem, personal control, and low illness uncertainty. Sears et al. (2003) found a link between optimism and some measures of benefit (but not others). Lechner et al. (2003) tested the relation of neuroticism to benefit finding but found none (similar to the finding of Tashiro & Frazier, 2003, mentioned above). There is also evidence that fighting-spirit coping relates to greater benefit finding, but that avoidance coping does not (Ho et al., 2004).

Present research

The study reported here adds to this developing literature. We report relations of benefit finding to a variety of variables in a multi-ethnic sample of women who had had surgery for breast cancer between 3 and 12 months earlier. The variables examined here include several personality traits we have studied earlier in the context of breast cancer, a measure of diverse aspects of coping, and several indices of psychological, sexual, and social well-being.

One trait measured in this study was optimism (Scheier et al., 1994). As noted earlier, optimism has been related to benefit finding in several studies, both with cancer patients (Sears et al., 2003) and with other samples (Davis et al., 1998; Tennen & Affleck, 1999), but a question has arisen as to whether those findings were artifactual (Tennen & Affleck, 1999). That issue is addressed here by using the revised measure of optimism (Scheier et al., 1994).

Another view of personality that seems relevant to benefit finding holds that personality derives in part from two biobehavioral systems (Carver, Sutton & Scheier, 2000; Fowles, 1993; Gray, 1981, 1990, 1994), a behavioral inhibition system (BIS) and a behavioral activation system (BAS). Presumably there are individual differences in sensitivity of each system. Threat sensitivity has been tied to neuroticism and incentive sensitivity to extraversion (Carver et al., 2000). Scales for BIS and BAS sensitivity have already predicted emotional distress in the sample examined here (Carver, Meyer & Antoni, 2000). It seems plausible that incentive sensitivity may also contribute to benefit finding. That is, people who are very responsive to incentives may be more likely to note positive experiences, even during a period of adversity. The measure of threat sensitivity permits a conceptual replication of previous tests of neuroticism as a correlate of benefit finding.

Coping was measured in this study by the Brief COPE (Carver, 1997). The Brief COPE assesses a wide array of coping responses, which permits testing of diverse coping responses as correlates of benefit finding. Sears et al. (2003) reported an association between one aspect of coping (positive reframing) and benefit finding in cancer patients, but did not examine the full array of responses measured by the COPE. Ho et al. (2004) also used a relatively limited measure of coping. The Brief COPE allows us to expand the scope of information available.

The measures of emotional and social well-being that are included in the data set address the relation between benefit finding and well-being that is manifested in a variety of areas of life. These include mood disturbance and depression, disruption of social and recreational activities, sexual disruption, perceptions of life quality, and concerns for the future.

Finding benefit in cancer has been assessed in several different ways in the literature. Some studies assessed the balance of benefit to cost (Andrykowski et al., 1993; Cordova et al., 2001), while others used general measures of post-traumatic growth (Park et al., 1996; Tedeschi & Calhoun, 1996). Helgeson and her colleagues (Helgeson et al., 2004; Tomich & Helgeson, 2004) developed a set of items that focus explicitly on benefits (independent of costs), written specifically for breast cancer patients, covering diverse domains. Here we used a variant of this latter scale, as we did in a previously reported study of a stress management intervention among cancer patients (Antoni et al., 2001).

Method

Participants

The sample for the analyses reported here was 230 early-stage breast cancer patients recruited through several medical practices in the Miami area and the local American Cancer Society (ACS) office. In most cases, the recruitment began with a letter from the physician (or the ACS) introducing the study and inviting the women to

consider participating (in rare cases first contact occurred at an office visit). The letter was sent to all the women these physicians had treated within the past year and whose diagnosis did not exceed Stage II. For reasons that are unrelated to this report, the project examined potential differences across time since surgery. Thus, assessments occurred at either 3, 6, or 12 months post-surgery, in roughly equal numbers.

The women interested in participating returned a form indicating when and where they could be reached by phone. Female graduate students called, explained the study, screened for exclusion criteria (psychiatric history, prior cancer, or major concurrent disease), and for those who agreed to participate, mailed a packet containing a questionnaire and a consent form. Upon return of the questionnaire, the women were paid \$40 for their participation. The final rate of participation among the women who were first contacted by letter was approximately 80%.

The participants were diagnosed with Stage 0 ($n = 10$), Stage I ($n = 133$), or Stage II ($n = 87$) breast cancer (staging was self-reported, and confirmed by a chart review, if the participant reported being unsure). Approximately 32% of the women (73) reported a positive family history of breast cancer. Nodal involvement ranged from 0 to 21 ($M = 0.85$, $SD = 2.63$). Most participants were English-speaking women, although a few of them ($n = 25$) completed the questionnaires in Spanish (preliminary analysis determined that the outcome variables did not differ as a function of language of administration, and that language did not interact significantly with the predictor variables).

Most of the women were married or in an equivalent relationship ($n = 163$); 29 were separated or divorced, 24 were widowed, and 14 were single. The majority of the women were non-Hispanic White ($n = 145$), 61 were Hispanic, and 24 were Black. The average level of education of the participants was 14.2 years ($SD = 2.91$). Among those currently employed, 100 worked full time, and 21 part-time; 109 were currently not working outside the home. The average age was 53.45 ($SD = 12.34$), with ages ranging from 27 to 87 (as data collection was funded by a project with a focus on the concerns of younger patients, younger women were over-recruited).

Eighty-five of the women had modified radical mastectomies, 9 bilateral mastectomies, and 131 lumpectomies (5 did not indicate their procedure). Fifty-one women had undergone reconstruction. Adjuvant treatment was coded using the following three responses: “no,” “yes, but not in the past 4 weeks,” and “yes in the past 4 weeks.” On questions regarding adjuvant treatment, 136 reported radiation therapy (41 in the past 4 weeks), 88 reported chemotherapy (30 in the past 4 weeks), and 85 were receiving tamoxifen.

Benefit finding

The measure of benefit finding used the stem, “Having had breast cancer . . .” Each item continued by mentioning a potential positive contribution to the respondent’s life that might plausibly follow from the cancer experience (see Tomich & Helgeson, 2004). The items focus on diverse potential benefits ranging from family and social relationships, life priorities, sense of spirituality, career goals, self control, and the ability to accept circumstances. Response options used here were, “I disagree

Table I. Benefit finding items, means, and standard deviations ($N=230$).

Item	M	SD
Having had breast cancer . . .		
1. has led me to be more accepting of things.	2.23	0.98
2. has taught me how to adjust to things I cannot change.	2.41	0.89
3. has helped me take things as they come.	2.34	0.91
4. has brought my family closer together.	2.10	1.05
5. has made me more sensitive to family issues.	2.16	0.99
6. has taught me that everyone has a purpose in life.	2.17	1.07
7. has shown me that all people need to be loved.	2.32	1.05
8. has made me realize the importance of planning for my family's future.	2.09	1.07
9. has made me more aware and concerned for the future of all human beings.	2.06	1.06
10. has taught me to be patient.	1.93	1.04
11. has led me to deal better with stress and problems.	1.77	1.10
12. has led me to meet people who have become some of my best friends.	1.05	1.12
13. has contributed to my overall emotional and spiritual growth.	2.06	1.08
14. has helped me become more aware of the love and support available from other people.	2.55	0.81
15. has helped me realize who my real friends are.	2.43	0.89
16. has helped me become more focused on priorities, with a deeper sense of purpose in life.	2.47	0.80
17. has helped me become a stronger person, more able to cope effectively with future life challenges.	2.43	0.83

a lot" (0), "I disagree a little" (1), "I agree a little" (2), and "I agree a lot" (3). The respondents also had the opportunity to indicate that an item was not applicable. We reduced a starting item pool to a set of 17 (Table I), by removing items that seemed redundant, were left unanswered by a significant number of respondents, or were reported as confusing (these 17 were the item set that also was used in Antoni et al., 2001).

A factor analysis was used to explore the structure of responses to these 17 items. Although only four factors could be extracted, other information suggested that the measure was appropriately treated as unitary (as was also concluded by Tomich & Helgeson, 2004). First, a scree plot showed a sharp break from the first factor (eigenvalue = 7.02) to the second factor (eigenvalue = 1.50), with no clear subsequent break. Further, all items loaded at least 0.47 on the first unrotated factor (with a high of 0.74), and only one loaded more strongly on another factor (-0.58) than it did on the first factor (in this case, 0.50). Finally, the content of the items of the four factors revealed a clear first factor organized around accommodation, but no clear substantive focus for the other factors. Given these considerations, we concluded that it is reasonable to treat the scale as a unidimensional measure. In this sample, the alpha was 0.91, mean inter-item $r=0.37$, mean item-total $r=0.58$, and the overall mean total response across the 17 items = 36.58 (SD = 10.66).

Personality-related measures

The two personality measures used in the analyses reported here were chosen because in the previous research each of them had related to meaningful outcomes among

breast cancer patients. In each case, there is also a conceptual basis to suggest that the quality should relate to benefit finding.¹

Optimism. Optimism versus pessimism – the disposition to expect good versus bad outcomes in life – was assessed in this study with the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994). The LOT-R consists of six coded items plus fillers. Three of the coded items are phrased positively (e.g., “In uncertain times I expect the best”) and three are phrased negatively (e.g., “If something can go wrong with me, it will”). Each item was answered on a scale that ranged from “I agree a lot” (1) to “I disagree a lot” (4). An extensive body of research documents that this measure is a reliable predictor of behavioural and psychological outcomes (Scheier & Carver, 1992; Scheier et al., 2001), including adaptation to breast cancer (Carver et al., in press; Epping-Jordan et al., 1999; Stanton & Snider, 1993). The alpha for LOT-R was 0.71 in this sample, with an overall sample mean of 19.89 (SD = 3.49).

Sensitivity to threats and incentives. The BIS/BAS scales (Carver & White, 1994) were devised to measure the dispositional sensitivities of the systems responsive to threat and incentives. There are four scales: one reflects BIS sensitivity, three reflect aspects of BAS sensitivity (Drive, Fun Seeking, and Reward Responsiveness). The three aspects of BAS sensitivity derive from diverse statements about how BAS functioning should be reflected. That is, high BAS engagement should cause people to seek out new incentives, to be persistent in trying to reach incentives, and to respond with positive feelings when incentives are attained (see Carver & White, 1994, for detail). These functions yield three BAS-related factors.

Items on the BIS/BAS scales are first-person statements, with response options ranging from “very false for me” (1) to “very true for me” (4). The items are coded so that high scores reflect strong tendencies toward the quality in the scale’s name. The scales have predicted differences in outcomes such as anxiety and happiness in relevant situations (Carver & White, 1994), asymmetries in resting levels of cortical arousal (Harmon-Jones & Allen, 1997; Sutton & Davidson, 1997), and responses to reward and punishment during conditioning (Zinbarg & Mohlman, 1998).

We used an abbreviated version of the BIS/BAS because the project involved many measures and a consequent high participant-response burden. For each BAS scale, the two items with the highest factor loadings in a prior sample were used (e.g., for Drive, “I go out of my way to get things I want”; for Fun-seeking “I crave excitement and new sensations”; for Reward responsiveness “When I get something I want, I feel excited and energized”). For the BIS scale, the three items with the highest factors loadings were used (e.g., “Criticism or scolding hurts me quite a bit”). In a sample of 1053 college students, these reduced scales correlated as follows with the corresponding full scales in which they were embedded: BIS = 0.88, Drive = 0.91, Reward Responsiveness = 0.76, and Fun Seeking = 0.89. The alphas for the reduced scales were 0.55 for BIS, 0.47 for Reward responsiveness, 0.72 for Drive, and 0.54

¹We also examined a measure of the investment in body image (Carver et al., 1998). This measure has been related to aspects of well-being in breast cancer patients, but there was less of a conceptual basis for expecting it to relate to benefit finding, and it did not.

for Fun-seeking. All these alphas approximate or exceed 0.50, which is regarded as acceptable for the brief scales (Nunnally, 1978).

Psychosocial adjustment

Distress. Distress emotions were assessed with a brief series of descriptive adjectives used in earlier breast cancer research (Carver et al., 1993). Respondents indicated the degree to which they had experienced each feeling “during the past week including today.” The response options ranged from “not at all” (1) to “extremely” (5). The items assessed depression (“helpless,” “unhappy,” “worthless,” and “hopeless”), anxiety (“tense,” “nervous,” and “anxious”), and anger (“angry,” “resentful,” and “grouchy”). In a sample of 235 students, these item sets correlated 0.87, 0.93, and 0.87, respectively, with comparable scales from the Profile of Mood States (McNair et al., 1971). As the scales were strongly inter-related, an index of distress was created by averaging responses to these items ($\alpha = 0.89$).

Depressive symptoms. We also collected a more focused measure of depression symptoms. These were assessed by the Center for Epidemiological Studies Depression scale (CES-D; Radloff, 1977). The CES-D measures a range of cognitive, affective, motivational, and somatic symptoms (for validity see Myers & Weissman, 1980; Schulberg et al., 1985). Instructions to respondents are to indicate the extent to which they had a variety of experiences (as first-person sentences, e.g., “I felt depressed” and “I thought my life had been a failure”), in this case, within the past week. Options for responding range from “Rarely or none of the time” (1) to “Most or all of the time” (4), and responses are summed. The alpha for the CES-D was 0.92, with a sample mean of 12.4 ($SD = 11.13$). The CES-D correlated 0.75 with the distress index. Nearly a third of the women ($N = 72$) had CES-D scores of 16 or above, which is the usual cut-off for moderate depression.

Perceived quality of life. Another measure collected was the extent to which the women reported feeling a positive quality of life in their day-to-day experiences. Ten items were selected from a broader set developed by Andrews and Withey (1976), using the stem “How do you feel about . . .” The items used address diverse aspects of life (e.g., “how interesting your day-to-day life is,” “the religious or spiritual fulfillment in your life,” “the work or home activities that you do,” “the amount of challenge in your life”). Respondents considered the content of each item and indicated how they felt about that domain of life, on a scale ranging from “terrible” (1) to “delighted” (7). This index ($\alpha = 0.92$) correlated -0.62 with the distress index and -0.69 with the CES-D.

Psychosexual adjustment. A different aspect of adjustment to breast cancer is what might be viewed as psychosexual well-being. As a measure of psychosexual well-being, participants in this sample completed the subscale of the Psychological Adjustment to Illness Scale (PAIS; Derogatis, 1975) that deals with the impact of illness on sexual relationships. Items assess changes in sexual interests, activities,

and abilities (e.g., Sometimes when people are ill they report a loss of interest in sexual activities. Have you experienced less sexual interest since your illness?"). Women who reported themselves to be in sexual relationships completed this measure ($N=148$). Past research has found scale scores correspond to physicians' ratings of adjustment, and distinguish adequately between levels of adjustment (De-Nour, 1982). In this sample the alpha was 0.79 and the sample mean, 9.25 ($SD=3.35$).

Disruption of social and recreational activities. An important but often neglected aspect of adjustment to an illness is remaining engaged in life's normal activities after medical treatment. If the illness or its treatment disrupts social activities, either for psychosocial reasons or because of physical symptoms from adjuvant treatment, the patient may become more isolated from her social network, which can lead to further adverse effects on her well-being (Bloom & Spiegel, 1984). To assess illness-related disruptions, we used two subscales of the Sickness Impact Profile (SIP; Bergner et al., 1981). These were subscales measuring adverse impact of the illness or its treatment on Social Activities (e.g., "I am doing fewer social activities with groups of people") and Recreational Pastimes (e.g., "I am not doing any of my usual recreation and pastimes, for example, watching TV or reading"). As scores on these scales were strongly correlated ($r=0.70$), we combined them into an index of disruption, by computing z scores and averaging them.

Concerns about breast cancer. We assessed the extent to which the women were currently concerned about a series of possible adverse effects of breast cancer and its treatment, using the Profile of Concerns About Breast Cancer (PCBC, Spencer et al., 1999). Each item referred to one potential adverse effect and asked respondents how concerned they were about it, from "not at all concerned" (1) to "extremely concerned" (5). Note that the PCBC does not assess perceptions of present adversity, but the extent to which the possibility was a concern in the woman's mind.

Previous analyses (Spencer et al., 1999, using essentially this same data set) found that the concerns form three factors. The first (Life and Pain Issues) reflects existential issues – loss of self-sufficiency, pain, recurrence, dependency on medication, the loss of ability to go places and do things, premature death, the sense of always feeling damaged from the disease, and overwhelming bills. Factor 2 (Rejection Issues) reflects items bearing on possible adverse reactions from family and friends. Factor 3 (Sexuality Issues) reflects concerns about the possibility of becoming less feminine, less attractive, and less sexual in the future because of the cancer treatment. The data analyzed here were factor scores from that factor analysis (N was 173 for this measure, due to missing item-level data, see Spencer et al., 1999).

Coping

Coping responses were assessed using the Brief COPE (Carver, 1997). The scales of the Brief COPE include acceptance, active coping, planning, behavioural disengagement, denial, substance use, humor, positive reframing, religious coping, self-distraction, use of emotional support from friends, use of emotional support from partner, and venting. Each scale has two items. The participants were told to

rate how often they used the response in trying to deal with the stresses related to their diagnosis and surgery. The answer choices ranged from “I haven’t been doing this at all” (0) to “I’ve been doing this a lot” (3). The scales were scored by averaging the relevant item responses.

Results

Relations with demographic and medical variables

We first tested relationships between benefit finding and all of the demographic and medical variables described earlier. Among the medical variables, two associations were significant, though weak. Benefit finding related positively to stage of disease, $r=0.16$, $p<0.05$, and to use of anti-hormonal treatment, $r=0.15$, $p<0.05$.² Time since surgery was unrelated to benefit finding. Among demographic variables, two more associations emerged. Benefit finding related inversely to education level, $r=-0.21$, $p<0.01$. Benefit finding also related to ethnicity, $F(2,227)=6.37$, $p<0.003$. Post hoc comparisons (using the LSD test) showed that African American ($M=41.33$, $SD=11.48$) and Hispanic women ($M=39.02$, $SD=9.15$) reported greater benefit finding than did the non-Hispanic White women ($M=34.77$, $SD=10.73$).

Benefit finding, personality, coping, and well-being

Relations between benefit finding and the scales measuring personality are presented in Table II, as standardized regression coefficients. Each comes from an analysis controlling for relevant medical and demographic variables (education, stage, tamoxifen, and ethnicity dichotomized as minority *vs* non-minority). As can be seen, benefit finding related to the disposition to be optimistic about life and to reward responsiveness. Neither association was very strong, however.

Associations with various aspects of coping are in Table III. Benefit finding related to positive reframing, to which it also relates conceptually. Benefit finding also related moderately strongly to religious coping. Other correlations were weaker. Benefit

Table II. Correlations of benefit finding scale with personality-related measures.

	Standardized regression coefficient	Unique <i>R</i> -square
Optimism	0.24***	0.06
Threat sensitivity	-0.03	0.00
Incentive sensitivity		
Fun-seeking	0.03	0.00
Drive	-0.02	0.00
Reward responsiveness	0.16*	0.03

* $p<0.05$; ** $p<0.01$; *** $p<0.001$.

Note: Analyses control for education, stage, tamoxifen use, and minority status.

²Nodal involvement was tested both using number of nodes and a dichotomized (yes-no) index. In neither case was nodal involvement related to benefit finding.

Table III. Correlations of benefit finding with coping.

	Standardized regression coefficient	Unique R-square
Active coping	0.14*	0.02
Self-distraction	0.11	0.01
Denial	-0.10	0.01
Substance use	-0.13*	0.02
Use of emotional support from family/friends	0.12	0.01
Use of emotional support from partner	0.09	0.01
Behavioral disengagement	-0.09	0.01
Venting	0.02	0.00
Positive reframing	0.33***	0.11
Acceptance	0.16*	0.03
Planning	0.12	0.01
Humor	-0.08	0.01
Religious coping	0.28***	0.08

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Note: Analyses control for education, stage, tamoxifen use, and minority status.

Table IV. Concurrent correlations of benefit finding with measures of well-being.

	Standardized regression coefficient	Unique R-square
Distress	-0.27***	0.07
Depression (CES-D)	-0.23**	0.05
Perceived quality of life	0.28***	0.08
Social disruption	-0.03	0.00
Sexual disruption	0.05	0.00
PCBC Life and pain concerns	-0.03	0.00
PCBC Rejection concerns	0.01	0.00
PCBC Sexuality concerns	0.03	0.00

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Note: Analyses control for education, stage, tamoxifen use, and minority status. PCBC is Profile of Concerns about Breast Cancer.

finding related significantly positively, though weakly, to both active coping and acceptance and inversely to substance use.

We explored one further issue regarding coping and benefit finding. As indicated above, religious coping and minority status both related to benefit finding. We also know from the previous analyses that minority women in this sample used more religious coping than the rest (Culver et al., 2004), $F(1, 228) = 21.33$, $p < 0.001$. We tested the possibility that religious coping might mediate the relationship between minority status and benefit finding, by examining change in the predictive effect of minority status on benefit finding when religious coping was introduced. Without religious coping, minority status was a significant predictor (even with all controls), $\beta = -0.15$, $p < 0.04$. When religious coping was added to the model, the effect of minority status was no longer significant, $\beta = -0.08$, $p = 0.25$.

The associations of benefit finding with indices of well-being are in Table IV. There was no relation between benefit finding and measures of social or sexual disruption. However, benefit finding related inversely to distress and depression and positively to perceived quality of life. The association with depression was also displayed when CES-D was dichotomized at the 16-and-above cut-point, with significantly less benefit reported by those in the depressed range than those in the non-depressed

range, $F(1, 228) = 5.41$, $p < 0.03$. Finally, we related benefit finding to the three factors of the PCBC, which reflect concerns women have about their cancer. Benefit finding proved not to relate significantly to any of them.

One further multiple regression analysis was conducted in which benefit finding was regressed on the set of variables that had been found to be related to it individually: education, minority status, stage, tamoxifen, optimism, reward responsiveness, five aspects of coping, and distress (depression and perceived quality of life were omitted to avoid multicollinearity problems). As a set, these variables accounted for 24.7% of the variance in benefit finding (adjusted), which is fairly substantial. Significant individual contributions were made by education ($\beta = -0.15$), positive reframing ($\beta = 0.26$), religious coping ($\beta = 0.15$), acceptance ($\beta = 0.15$), and distress ($\beta = -0.24$).

Discussion

A tri-ethnic sample of early-stage breast cancer patients who had been diagnosed and surgically treated within the preceding 12 months completed a battery of measures including a report of having found benefit in the experience of having cancer. We replicated several previous findings concerning correlates of benefit finding, but failed to replicate others. We also provided some additional information about correlates of the experience of benefit finding.

Greater reports of benefit finding related to lower education levels in this sample, consistent with Tomich and Helgeson's (2004) report of an association with lower SES, but contrary to Sears et al.'s (2003) finding for education and conceptually opposite to Cordova et al.'s (2001) finding for income. We found, as did Tomich and Helgeson (2004), elevated reports of benefit finding among minority women. As did Tomich and Helgeson (2004) and Lechner et al. (2003), we also found a weak, though significant, relation between reporting benefits and higher disease stage (through Stage II, the highest in this sample).

With respect to the relation between benefit finding and emotional distress, evidence in cancer samples has been mixed. Tomich and Helgeson (2004) found a weak positive association with distress in cross-sectional data (their time 1), Sears et al. (2003) found a positive association with distress for one measure of benefit finding but not another, Cordova et al. (2001) found a positive association only when the distress was extreme enough to reflect post-traumatic stress disorder. Ho et al. (2003) found inverse associations and no relations to distress, depending on the measure. Similarly, our data yielded an inverse association between benefit finding and distress. It is of interest, in this regard, that benefit finding did not relate significantly to any other aspect of psychosocial well-being (social disruption, sexual disruption, or cancer concerns).

As had been found earlier, both in non-cancer samples (Affleck & Tennen, 1996; Davis et al., 1998; Tennen & Affleck, 1999) and in one cancer sample (Sears et al., 2003), benefit finding related to the disposition to be optimistic about life. Our finding for optimism is not subject to the concern Tennen and Affleck (1999) raised about the earlier findings, because optimism was measured in this study with the LOT-R. The finding thus appeared to strengthen the previous conclusions about the involvement of this personality disposition in benefit finding (Tennen & Affleck, 1999).

A finding that is interesting in its absence was the failure of threat sensitivity to relate to benefit finding. Threat sensitivity closely resembles neuroticism (Carver et al., 2000). At least two previous studies – one among cancer patients (Lechner et al., 2003), the other a sample responding to relationship break-ups (Tashiro & Frazier, 2003) – failed to find ties between neuroticism and benefit finding. The same was true of threat sensitivity in this study. The accumulated evidence suggests that traits pertaining to negativity do not play a role in benefit finding.

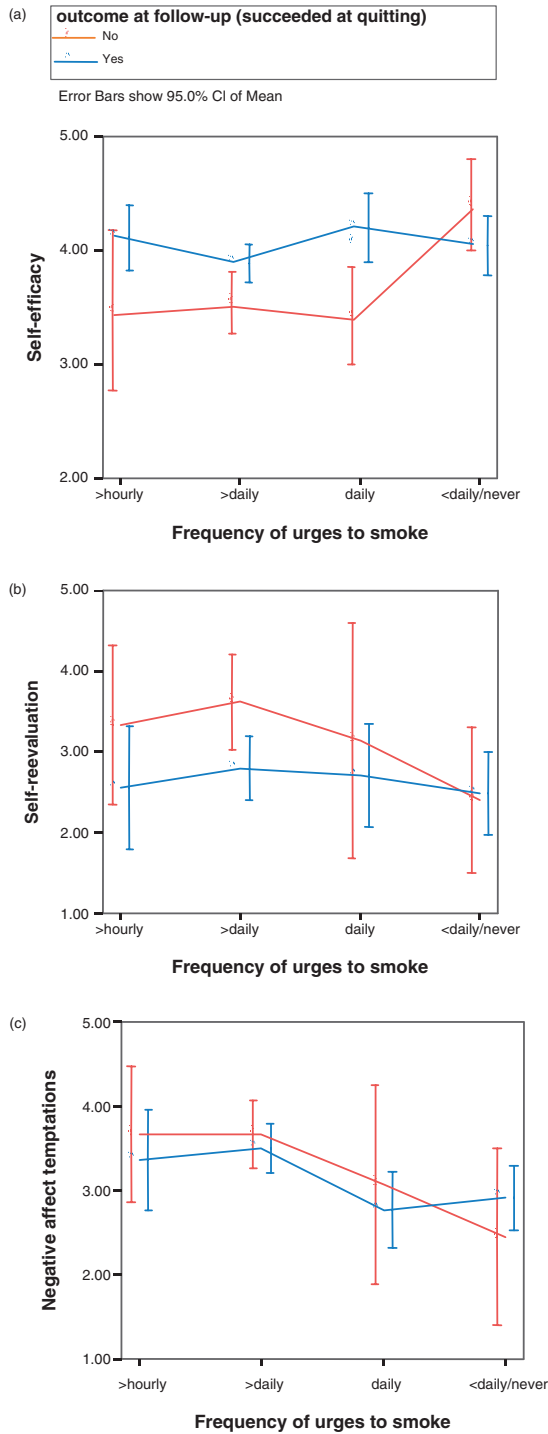
We also found associations of benefit finding with aspects of coping. Benefit finding related to the tendency to engage in positive reframing of the stressful experience, and the tendency to use religious coping. The former finding replicates a result of Sears et al. (2003). The latter finding appears to be the first instance of this relation in breast cancer patients, though there is a good deal of information linking benefit finding to religious coping in other kinds of samples (Frazier et al., 2004; Park et al., 1996). The repeated association with religious coping across studies suggests that at least part of the benefit-finding experience builds on religious resources (see also Park, 1998). Indeed, an interesting ancillary finding in this study was that the role of religious coping seemed to subsume the effect of minority status. That is, once religious coping was taken into account, minority women no longer reported significantly enhanced benefit.

There is also some potential interest in the relative lack of association with avoidance sorts of coping. Though there was a barely significant inverse relation to substance use, there were no relations to venting, denial, self-distraction, or behavioral disengagement. This pattern is consistent with Ho et al.'s (2003) report of an absence of association with avoidance coping. Again, failure to find these associations may mean that negative kinds of coping play no role in this phenomenon.

Although there was convergence with some measures, the findings of this study also provide a degree of discriminant validity for the benefit finding construct. That is, the individual associations with personality, coping, and well-being were not terribly large (though together accounting for 25% of the variance). Finding benefit in breast cancer is not the same thing as being generally optimistic about life, it is not the same thing as the absence of distress, and it is not the same as positive reframing (see also Sears et al., 2003). Indeed, if one examines the number of variables tested as correlates and the number of associations that exceeded 0.20, one is struck by the fact that benefit finding was largely distinct from most other constructs in the data. To some extent, then, we are left with a phenomenon in search of a conceptualization, as Tennen and Affleck (1999) put it.

Limitations and characterization

We should also note some limitations to this study. This was a volunteer sample, as is true of most of the literature of psycho-oncology. As such, it was likely to be biased toward women with the time and interest to complete our measures. These women doubtlessly are more educated than the patient population as a whole, and probably better off psychologically. Minority representation, though more substantial than in many studies, was still not as large as desirable. Another limitation is our use of one particular self-report measure of benefit finding, rather than a set of measures with somewhat different focuses (cf. Sears et al., 2003). And although there is evidence



Figures 1a, b, c. Relationship of selected variables to outcome by frequency of urges to smoke. (a) Self-efficacy; (b) Self-reevaluation and (c) Negative affect temptations. Note: n >hourly = 31; >daily = 89; daily = 31; <daily/never = 49.

that self-reports of growth after breast cancer are valid (Weiss, 2002), they do remain self-reports of an experience that occurs within the person.

Another particularly important limitation of this study is that it was cross-sectional. We were able to determine a set of variables that covaried, but it is impossible to determine causal ordering. It might be tempting to infer from the findings that religious coping and positive reframing induce benefit finding, but we have no evidence of such a sequence. What we know is limited to the fact that certain qualities co-occurred across the sample. Nonetheless, the qualities that came together the qualities that surrounded the experience of benefit finding, are those that seem to reflect a positive, accommodative, and appreciative orientation to life.

Benefit finding, as measured here, extends in many directions. Some of these are attaining a better internal psychological balance, an increased acceptance of the imperfections in life, renewed appreciation of family and friends, spiritual growth, and change in life priorities. The particular benefits found by a given person can be expected to depend on the circumstances in that person's life. For some, the benefit may be experienced as a kind of personal growth (Cordova et al., 2001). For others, the experience may be less one of *finding* a new benefit than a *reminding* of good things that are already part of their lives (Tennen & Affleck, 1999, 2002). Whether one sort of benefit is more important than another is a question that deserves further attention.

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