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Finding Benefit in Breast Cancer During the Year After Diagnosis Predicts Better Adjustment 5 to 8 Years After Diagnosis

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Cancer patients experience positive as well as adverse consequences from diagnosis and treatment. The study reported here examined longer term reverberations of such experiences. A set of benefit-finding items along with measures of well-being were completed by 230 early-stage breast cancer patients in the year postsurgery. Four to 7 years later, 96 of them again completed measures of well-being. Controlling for initial distress and depression, initial benefit finding in this sample predicted lower distress and depression at follow-up.

Key words: quality of life, breast cancer, benefit finding, cancer sequelae

Breast cancer patients confront many stressors. Most impactful is the diagnosis itself (e.g., Andrykowski, Cordova, Studts, & Miller, 1998). However, the medical procedures that follow are also stressful, as are treatment side effects (e.g., Hann, Jacobsen, Martin, Azzarello, & Greenberg, 1998). Beyond the physical challenges, breast cancer patients experience a variety of psychological threats and losses.

Although the cancer experience is distressing and disruptive, awareness is growing that there are aspects of the experience that patients view as beneficial. Many report outcomes such as improved personal resources, an enhanced sense of purpose, greater spirituality, closer ties with others, and changes in life priorities (e.g., Andrykowski, Brady, & Hunt, 1993; Cordova, Cunningham, Carlson, & Andrykowski, 2001; Dow, Ferrell, Leigh, Ly, & Gulasekaram, 1996; Ferrell, Dow, Leigh, Ly, & Gulasekaram, 1995; Kurtz, Wyatt, & Kurtz, 1995; Stanton et al., 2002; Taylor, Lichtman, & Wood, 1984). Though it seems paradoxical, some patients say having been diagnosed with cancer has been a positive experience in their lives overall. Such findings join a literature in other areas suggesting that traumatic events can yield positive outcomes (e.g., Affleck & Tennen, 1996; Davis, Nolen-Hoeksema, & Larson, 1998; Ickovics & Park, 1998; McFarland & Alvaro, 2000; McMillen, Smith, & Fisher, 1997; Mohr et al., 1999; Park, Cohen, & Murch, 1996; Tedeschi & Calhoun, 1996; Tedeschi, Park, & Calhoun, 1998; Updegraff & Taylor, 2000).

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Assessing Benefits

Finding benefit in cancer has been assessed in several ways. In some cases, assessment of spiritual benefit was a facet of a broad assessment of quality of life (e.g., Ferrell et al., 1995; Kurtz et al., 1995). Others have assessed blends of benefit and cost with bipolar scales (Andrykowski et al., 1993; Cordova et al., 2001). Often (though not always), the measures are limited to spiritual benefits. There also exist measures of posttraumatic growth that apply to any adverse event rather than to the experience of a particular disease (Park et al., 1996; Tedeschi & Calhoun, 1996) and thus can be used broadly. Helgeson and her colleagues (Helgeson, Snyder & Seltman, 2004; Tomich & Helgeson, 2004) developed a set of items that measure perceived benefits independent of costs, range more widely than spiritual growth, and focus on breast cancer. Antoni et al. (2001) used a variant of that scale in a study of a stress management intervention among cancer patients, observing that benefit finding increased after the intervention.

An important question is whether initial benefit finding has beneficial long-term effects. Studies from outside the cancer literature have reported positive long-term effects of benefit finding (e.g., Affleck, Tennen, Croog, & Levine, 1987; Affleck, Tennen, & Rowe, 1991; Davis et al., 1998; McMillen et al., 1997). In the cancer literature, however, results have differed. Sears, Stanton, and Danoff-Burg (2003) found no relation between initial benefit finding and distress a year later. Tomich and Helgeson (2004) found that initial benefit finding predicted *elevated* distress 9 months later. We report here further data on the issue: Participants in an earlier study of early-stage breast cancer patients (Spencer et al., 1999) completed a measure of benefit finding and several measures of well-being in the year postsurgery. They were recontacted and reassessed at a time when all were 5–8 years postsurgery.

Method

The initial project (Spencer et al., 1999) was a cross-sectional study that enrolled patients at 3, 6, or 12 months postsurgery. Women received a brief description by a member of the medical staff. Those interested were put in touch with a research assistant who explained the study in more detail,

obtained informed consent, and proceeded with data collection (for more detail, see Spencer et al., 1999).

Recruitment into the follow-up was initiated by letters sent to prior participants. The letter indicated that we wished to examine quality of life among long-term survivors of breast cancer. The woman was invited to return a postcard to find out more. Those who chose to participate were sent questionnaires and an informed consent form, which they completed and returned by mail. Each received $40 in compensation for her time.

At the time of initial data collection, we had not envisioned the follow-up. Given the time lapse (ranging from 4 to 7 years, $M = 6.22$, $SD = 0.74$), many women were hard to locate. Efforts were made to determine whether they were still living and obtain new addresses (via physicians' offices, hospitals, and other sources). In all, 101 women were located from the initial sample and completed reassessment. Six more were successfully reached but declined participation. Of the 101 who completed the follow-up assessment, 5 had not completed the initial benefit-finding measure fully and were dropped, leaving a sample of 96 for this follow-up study. Of these 96, 13 reported having had additional experience with cancer (a recurrence or new primary). Of the women lost to follow-up, 10 were confirmed to have died, 9 had not been sent letters by their prior request, and the rest could not be located or their mortality status confirmed.

Of the 96 women in this study (11 Black, 21 Hispanic, 64 non-Hispanic White), 3 had been diagnosed with Stage 0, 59 Stage I, and 34 Stage II breast cancer (nodal involvement ranged from 0 to 10, $M = 0.66$, $SD = 1.83$). Most were married or otherwise partnered (71). Average age at follow-up was 59.14 years ($SD = 10.03$, range = 33–79). Average education level was 14.3 years ($SD = 3.04$); 50 were employed. Thirty-seven had had modified radical mastectomies, 59 lumpectomies; 24 had had reconstruction; and 59 had undergone radiation, 37 chemotherapy, and 37 tamoxifen treatment.

Women lost to follow-up were compared with those who did complete the follow-up on all medical and demographic variables just described and all psychological variables relevant to this report. The groups did not differ significantly on any medical or demographic variable. Nor did the groups differ on the outcome measures presented here. It thus appears the follow-up sample was generally representative of the initial sample.

Initial Measures

Benefit finding. Benefit finding was measured in the initial study by items with the stem "Having had breast cancer . . . " Each item continued with a potential positive contribution to the woman's life that might plausibly follow the cancer experience (see Tomich & Helgeson, 2004). The items focus on potential benefits ranging from family and social relationships, life priorities, sense of spirituality, career goals, self-control, and ability to accept circumstances. Response options used were 0 (*I disagree a lot*), 1 (*I disagree a little*), 2 (*I agree a little*), and 3 (*I agree a lot*). Respondents also had the opportunity to indicate that an item was not applicable. A larger item pool was reduced to 17 by removing items that seemed redundant, were left unanswered by significant numbers of respondents, or were reported as confusing.

Distress. Distress emotions were assessed with adjectives used in earlier breast cancer research by Carver et al. (1993). Respondents indicated the degree to which they had each feeling "during the past week including today." Response options ranged from 0 (*not at all*) to 4 (*extremely*). Items assessed depression, anxiety, and anger. In a sample of 235 students, these item sets correlated at .87, .93, and .87, respectively, with comparable scales from the Profile of Mood States (McNair, Lorr, & Droppelman, 1971).

Depressive symptoms. A more focused measure of depression symptoms was also collected using the Center for Epidemiological Studies Depression scale (CES-D; Radloff, 1977). The CES-D measures a range of cognitive, affective, motivational, and somatic symptoms. Items are first-person statements. Options for responding range from 0 (*Rarely or none of the time*) to 3 (*Most or all of the time*), and responses are summed. Alpha for the CES-D was .92, with a sample mean of 12.4 ($SD = 11.13$). CES-D correlated .75 with the Distress index. Nearly a third of the women in the initial sample had CES-D scores of 16 or above, the usual cut-off for moderate depression.

Perceived quality of life. Women reported the extent to which they felt a positive quality of life in 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 day to day life is, religious or spiritual fulfillment, work or home activities, amount of challenge in life). Respondents considered each item and indicated how they felt about that domain of life on a scale ranging from 1 (*terrible*) to 7 (*delighted*). This index ($\alpha = .92$) correlated $-.62$ with the Distress index and $-.69$ with the CES-D.[1]

Follow-Up Measures

Participants in the follow-up completed several of the same measures, including the CES-D and the measure of perceived quality of life. Affects were measured at follow-up with the Affects Balance Scale (ABS; Derogatis, 1975), a set of adjectives designed to aggregate positive and negative affects separately. Ratings were made of the extent of the feeling "during the past week including today" using choices from 0 (*never*) to 4 (*always*). We created the ABS Positive Affect index by summing all positive-affect items. To ensure that initial and subsequent assessments of negative affect would be fully comparable, however, we used a subset of items from the negative affects measured at each assessment. The measures used at the two times share eight items assessing anxiety (*tense*, *nervous*, *anxious*), anger (*angry*, *resentful*), and depression (*unhappy*, *worthless*, *hopeless*). Because the items were highly correlated, they were averaged at each time point ($\alpha = .87$).[2]

Results

Preliminary analyses determined that initial benefit finding related to lower education, higher age, and higher stage at diagnosis. Surprisingly, additional cancer diagnosis did not relate to any psychosocial outcome at follow-up. Time to follow-up related inversely to follow-up CES-D. Education, stage, and age were controlled in all analyses; length of time to reassessment was also controlled in analysis of depression.

Prospective Prediction

The key question was the relation between initial benefit finding (years earlier) and well-being at follow-up. Table 1 (first column) shows standardized regression coefficients for initial benefit finding as a predictor of the outcome variables at follow-up. These coefficients derive from analyses incorporating the controls just noted. As can be seen, benefit finding several years earlier related to reports at follow-up of better quality of life, more positive affect, less negative affect, and less depressive symptoms. Also in Table 1 (second column) are coefficients that resulted when the earlier assessment of the outcome variable was added to the

[1] In addition to these measures we collected and examined a measure of psychosexual well-being and a measure of disruption of social and recreational activities. Neither related to benefit finding at initial assessment, and neither was predicted at follow-up by initial benefit finding.

[2] We also analyzed negative affect using the full index from the ABS and the full item set from initial assessment. Results were nearly identical to those reported here.

Table 1
Standardized Regression Coefficients for Initial Benefit Finding Predicting Four Follow-Up Measures of Well-Being (N = 96)

Measure	Effect of initial benefit finding	Effect of initial benefit finding, controlling for initial level of outcome variable
Perceived quality of life at follow-up	.38**	.11
Positive affect at follow-up	.36**	—[a]
Negative affect at follow-up	−.39***	−.28**
Depression (CES-D) at follow-up	−.33**	−.21*

Note. All effects control for education, age, and stage of disease; analysis of depression also controls for elapsed time since initial assessment. CES-D = Center for Epidemiological Studies Depression scale.
[a] No measure was obtained initially for positive affect.
* $p < .05$. ** $p < .01$. *** $p < .001$.

equation (this was not done for positive affect, because no such measure was obtained initially). As can be seen, initial benefit finding related to lower residualized negative affect and depression (i.e., after adjusting for initial levels).[3]

Prediction of follow-up depression was also examined using depression as a categorical outcome (dividing the sample at CES-D of 16 and above). Logistic regression (with the same set of controls) yielded a significant effect of initial benefit finding (Wald's statistic = 8.01, $p < .01$). When a further control was added for initial depression status (again, dichotomized), the predictive effect of initial benefit finding remained significant (Wald's statistic = 6.86, $p < .01$), independent of the substantial effect of earlier depression (Wald's statistic = 8.88, $p < .01$).

Although control variables are not our focal interest, some mention should be made of how they fared in these more complex models. Education (at initial assessment) related to higher self-rated quality of life ($\beta = .23$) and lower depression ($\beta = -.22$). Greater time since initial assessment related to lower depression ($\beta = -.21$). No other control made a unique contribution.

Discussion

Early-stage breast cancer patients who had been diagnosed and treated within the preceding year completed measures of well-being, including a report of benefits from having had cancer. From 4 to 7 years after their initial participation, 96 women completed another assessment of well-being. The reports of benefit finding made at the earlier assessment were used to predict later well-being. Initial benefit finding predicted more positive emotion and self-judged quality of life and less negative emotion and depression symptomatology at follow-up. Indeed, higher initial benefit finding predicted significantly lower distress and depression at follow-up even after controlling for initial levels of these variables.

Though these findings are conceptually consistent with those of some prior research on other populations (Affleck et al., 1987, 1991; Davis et al., 1998; McMillen et al., 1997), they contradict findings recently reported by Tomich and Helgeson (2004) among breast cancer patients. Tomich and Helgeson found that initial benefit finding (or benefit finding in interaction with disease stage) predicted more negative affect at 3 and 9 months later, controlling for initial negative affect. How might these contradictory results be accounted for?

Our study differs in several ways from that of Tomich and Helgeson (2004), any of which might contribute to the different outcomes. Their sample included women with more severe illness (Stage III) than did ours (which went only to Stage II). Perhaps the experience of finding benefit promotes greater emotional turmoil in persons with worse prognosis, leading to negative affect. Tomich and Helgeson reported, however, that the pattern in their data remained much the same when these more severe cases were removed, contradicting this interpretation.

Another difference is the time lag in the follow-up. Our follow-up assessment took place from 4 to 7 years after the earlier assessment, whereas the follow-ups by Tomich and Helgeson (2004) were much closer to the initial assessment (3 and 9 months later). This difference may be important, but it is hard to see how it would have led to the divergence in outcomes that occurred.

Another obvious difference is that the samples came from very different parts of the country. They reflect populations that differ in several ways (e.g., ours had a higher proportion of minority women), which may have contributed to the difference in outcomes. Although this is possible, again it is not readily apparent how such differences led to the divergent results.

Finally, the item sets used to measure benefit finding in the two studies are not identical. Our 17 items included 11 items used by Tomich and Helgeson (2004). To the extent that we can characterize the content of items that differed between studies, our remaining 6 items tend to focus on global qualities such as spiritual growth, priorities, becoming a stronger person, and realizing support from friends. The additional items in Tomich and Helgeson focus more on concrete qualities such as time management, renewing interest in activities, and family involvement. Again, however, it is difficult to see how this difference would have led to the difference in outcomes.

Whether benefit finding will prove to have positive effects over longer time periods is a question for further research. The evidence reported here suggests that benefit finding may have the potential to promote greater well-being over time. Yet it is important to keep in mind that not all the data fit that picture (Tomich & Helgeson, 2004). More work will be needed to determine when and how benefit finding works to people's advantage and when and how it fails to do so.

[3] Because Tomich and Helgeson (2004) reported an interaction between benefit finding and disease stage as a predictor of well-being, we also tested for interactions. None approached significance.

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