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Authors

Astin, John A
Shapiro, Johanna
Shapiro, Deane

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John A. Astin^a, Johanna Shapiro^b & Deane Shapiro^b

^a California Pacific Medical Center

^b University of California, Irvine School of Medicine

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Psychological Control and Morbidity/Mortality in Breast Cancer Patients: A 20-Year Follow-Up Study

John A. Astin

California Pacific Medical Center

Johanna Shapiro and Deane Shapiro

University of California, Irvine School of Medicine

The purpose of this paper was to examine the longitudinal effects of psychological sense of control and control-related coping strategies on breast cancer outcomes. Utilizing the California Cancer Registry, follow-up data on cancer recurrence and all-cause mortality were obtained for 54 of 58 women originally diagnosed with breast cancer in 1992 to 1994. Relationships between cancer outcomes and psychological control and mood at 4 and 8 months post-diagnosis were examined. Results of the study showed that a greater sense of control at 8 months was associated with less cancer recurrence, while higher desire for control at both 4 and 8 months was associated with greater likelihood of recurrence. Utilization of an accepting mode of control appeared to mitigate the negative effects of desire for control on recurrence. No significant relationships were observed between mood and mortality or recurrence. These findings suggest the potential value of examining psychological control and control-related coping on cancer outcomes in future epidemiological and clinical studies.

Keywords: sense of control, breast cancer, coping, acceptance, quality of life

The relationship between psychosocial factors and breast cancer outcomes remains unclear as well as controversial.¹ For example, while Petticrew et al.² failed to find an association between psychological coping styles and either cancer recurrence or survival, a recent meta-analysis found that stressful life experiences were related to higher mortality in cancer patients.³ A recent systematic review⁴ also found consistent associations between a number of psychosocial factors and survival/recurrence among breast cancer patients. Variables that showed significant associations with decreased survival included: stressful events, anxiety, hopelessness, and depression. However, inconsistencies were also observed across these 31 studies as well as methodological limitations and so no clear conclusions could be drawn regarding the relative power of psychological factors to predict cancer outcomes.⁴

While there have been conflicting data regarding the potential of psychological interventions to improve survival/disease progression outcomes in cancer patients,⁵ a recent

trial by Anderson et al.⁶ found evidence of very clear survival benefit for breast cancer patients receiving a psychological intervention.

A potentially important variable that may help to explain the impact on cancer recurrence and survival of the myriad psychosocial variables (eg, stress, depression) that have been examined to date is *sense of control*. In our own work,⁷ we found that general sense of control as well as particular coping styles (a balance of acceptance and change-based strategies for gaining a sense of control) predicted psychological adjustment in a sample of breast cancer patients.

FOLLOW-UP STUDY

In our earlier work, quality of life, mood, and psychological control were assessed in 58 women diagnosed with breast cancer at three time points: within 6 weeks of initial diagnosis; and then at 4 months and 8 months post-diagnosis.⁷ The goal of this study was to examine sense of control, mode of exercising control, and desire for control at diagnosis and the relationship of these variables to psychological adjustment

Correspondence should be addressed to John A. Astin, PO Box 426, Santa Cruz, CA 95061. E-mail: john@integrativearts.com

(ie, depression and anxiety) and quality of life, 4 months and 8 months post-diagnosis. The data were collected over a two-year period between 1992 and 1994. Findings indicated that those women who at diagnosis evidenced a high desire for control coupled with less use of an accepting mode of control (ie, the ability to let go of active control efforts) showed the poorest psychological adjustment at 8 months. In contrast, those women high in both desire for control and use of a positive accepting mode of control (ability to let go of active control efforts) showed the best psychological adjustment. These findings lent partial support to our theory that a balanced use of active and yielding or accepting control efforts may lead to optimal psychosocial adjustment and quality of life in the face of life-threatening illnesses such as cancer.^{8,9}

METHOD

In the present study, a 20-year follow up of this sample of 58 women was carried out to examine possible associations between these psychological variables (sense of control, psychological mood, and quality of life) and breast cancer recurrence and survival. Follow-up data for 54 of the original 58 women were obtained through the California Cancer Registry. In the original study, psychological variables were assessed as follows: (a) anxiety, with a subscale of the Hopkins Symptom Checklist¹⁰; (b) depression, with the Center for Epidemiological Studies Depression Scale (CES-D)¹¹; and (c) quality-of-life, with the Functional Living Index–Cancer (FLIC).¹² The Shapiro Control Inventory (SCI),¹³ an extensively researched measure of the multidimensional construct of psychological control, was utilized to examine overall sense of control, desire for control, and four distinct modes of control: (a) positive assertive (taking charge, being assertive); (b) negative assertive (eg, overly controlling); (c) positive yielding (eg, acceptance, equanimity); and negative yielding (passivity).

Our specific hypotheses were as follows:

1. Greater overall sense of control at 4-month and 8-month (post-diagnosis) assessments will predict decreased mortality and cancer recurrence.
2. Patients reporting greater use of both change (“positive assertive”) and acceptance-based (“positive yielding”) strategies to regain a sense of control will evidence decreased mortality and recurrence.
3. Diminished psychological well-being, as assessed by levels of anxiety and depression at 4- and 8-months, will be associated with poorer cancer-related outcomes.
4. Diminished quality of life post-diagnosis will be associated with poorer cancer-related outcomes.

5. Greater sense of control will moderate the relationship between cancer-related outcomes (mortality and recurrence) and both mood dysregulation and quality of life.

These hypothesized predictors were examined using binary logistic regression, controlling for age, and tumor grade and size in all analyses.

RESULTS

Among the 54 women for whom follow-up data were available, 14 had died and 13 had had at least one recurrence. (Owing to the small number of total deaths as well as deaths attributed to breast cancer [$N = 6$], we utilized all-cause mortality rather than breast cancer-related mortality as our primary outcome along with cancer recurrence.) While age was correlated with all-cause mortality ($R = .56$; $p < .001$), with older patients being significantly more likely to have died, there was no significant correlation between either age and recurrence or recurrence and mortality.

Mood and Quality of Life

No significant relationships were observed between mood (anxiety or depression) post-diagnosis and either mortality or cancer recurrence.

Overall Sense of Control

Overall sense of control at 4 months post-diagnosis was not associated with recurrence; at 8 months it predicted recurrence ($p = .04$), with higher sense of control being associated with less likelihood of recurrence, after controlling for age, and tumor grade and size.

Modes of Control

Positive assertive control was significantly correlated with all-cause mortality ($R = .29$; $p < .05$) such that those reporting higher endorsement of assertive-control items 8 months post-diagnosis were less likely to have died at follow-up. When age was controlled for in the logistic regression, this relationship became non-significant.

Desire for Control

Greater desire for control at both 4 months ($p = .02$) and 8 months ($p = .01$) was associated with higher likelihood of cancer recurrence, controlling for age and both tumor status and size.

Mode Interactions

We examined individuals scoring “high” (above the median) on both positive assertive and positive yielding control, what our previous work suggests is an optimally balanced control profile. No associations were found between this balanced use of control modes and either cancer recurrence or all-cause mortality at multi-year follow-up.

Based on the results from our earlier work,⁷ we also examined whether use of the positive yielding mode of control (accepting, trusting) might help mitigate the negative effects of excessive desire for control on cancer recurrence. As predicted, while high desire for control predicted greater likelihood of cancer recurrence, women who were high in desire for control but also scored high (above the median) in the yielding mode of control ($N = 14$) were *not* more likely to experience a recurrence. In contrast, women evidencing high desire for control and low yielding/accepting control ($N = 14$) were more likely to experience a recurrence ($p = .002$), controlling for age, tumor status and size in the regression.

COMMENT

Elsewhere,¹⁴ we have argued that studies examining the potential influence of control coping responses on stress and disease outcomes such as cancer have tended to frame things on a continuum with active/assertive control (eg, “fighting spirit”) on one end and passivity (“helpless/hopeless”) on the other. Our work, however, suggests that this framing of the construct fails to consider the potential negative consequences of maintaining a fighting-spirit attitude in the face of life challenges that are not within one’s control (eg, over-control) while also failing to distinguish between unhealthy passivity and healthy or adaptive acceptance, thereby overlooking the potential psycho-physical benefits of surrendering active control efforts.

The present study therefore endeavored to test in a very preliminary fashion, the potential influence of psychological control on morbidity and mortality in a sample of breast cancer patients utilizing a multidimensional measure of the control construct that includes both overall sense of control as well as four distinct modes for regaining a sense of control: (a) positive assertive (ie, fighting spirit); (b) positive yielding (ie, acceptance); (c) negative assertive (ie, overcontrol); and (d) negative yielding (ie, passivity).¹³

While the present findings need to be interpreted with considerable caution owing to the small sample size ($n = 54$) and also low rate of both cancer recurrence and mortality, our results suggest that those women evidencing a greater overall sense of control 8 months post-diagnosis were less likely to experience a recurrence at multi-year follow-up. Our findings also suggest that having a high desire for control may be

maladaptive insofar as its showing an association with greater likelihood of recurrence. At the same time, the capacity to let go of active control efforts (our positive yielding or accepting mode of control) appeared at least in our small sample to mitigate the negative effects of high desire for control on cancer recurrence.

While by no means conclusive, owing to the above-mentioned limitations, we feel these findings are at least suggestive of directions that future epidemiological and also clinical research examining the potential impact of psychological factors on cancer outcomes may want to take. Future studies may also wish to explore in a controlled randomized trial, with a larger sample, the effects of a targeted therapeutic intervention addressing relevant issues of control (eg, sense of control, desire for control, balancing assertive and yielding modes of control) and the effects of such an intervention on psychological well-being, as well as morbidity and mortality.^{15,16}

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