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Original articles

Predicting stress-related problems in long-term breast cancer survivors

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Abstract

Introduction: Little is known about the early clinical and psychosocial factors associated with subsequent stress-related problems in breast cancer survivors. **Methods:** We used data collected at 3, 7, 11, and 15 months post-diagnosis to predict stress-related problems in 86 breast cancer survivors at 6 years post-diagnosis. We examined two common stress-related problems: (a) emotional distress and (b) intrusion and avoidance. Hypothesized risk factors included perceived stressfulness of the cancer; fear of the future; poor perceived health; initial stress-related problems; avoidance coping; and second cancer experience. Hypothesized protective factors included active coping (seeking social support; positive problem solving); optimism; and social support. **Results:** Hierarchical multiple regression analyses, controlling for age and education, indicated that positive problem-solving coping at 3 months and emotional distress at 7 months significantly predicted 6-year emotional distress (R^2=.24, P<.01). Second cancer experience and 3-month intrusion and avoidance significantly predicted 6-year intrusion and avoidance (R^2=.38, P<.001). In both cases, risk and/or protective factors measured at 11 and 15 months did not add significantly to the regression equations. **Discussion/Conclusion:** Symptoms of intrusion and avoidance should be monitored carefully during the first 3 months following diagnosis because they signal the risk that these symptoms will persist in the long-term. Elevated emotional distress at 7-months post-diagnosis and second-cancer experiences may signal the need for psychosocial intervention. Overreliance on positive problem solving to cope early in the disease trajectory may be detrimental in the longer term.

Keywords: Breast cancer; Survivors; Distress; Intrusion and avoidance; Longitudinal design; Risk factors.

Introduction

Breast cancer will affect one in nine women over the course of their lifetimes [1]. Given 5-year survival rates as high as 96%, the majority will become long-term survivors [1]. With the use of the American Cancer Society's definition of a long-term survivor as someone who remains alive 5 years beyond cancer diagnosis, there are more than 2 million long-term breast cancer survivors in North America [1,2].

Despite these encouraging statistics, psychosocial adjustment and quality of life are not uniformly satisfactory among long-term survivors. Breast cancer survivors most frequently report experiencing emotional distress (e.g., depression and anxiety symptoms) and intrusion and avoidance (e.g., intrusive thoughts, feelings, and imagery; numbing of responsiveness and avoidance of feelings, situations, or ideas) in relation to cancer and its treatment. Approximately 20–50% of women with breast cancer continue to experience these stress-related problems in the long-term [3–7].

Although a sizable proportion of long-term breast cancer survivors continue to experience stress-related problems, few studies have examined predictors of these problems during the period of long-term survivorship. Most studies of

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psychosocial adjustment among long-term breast cancer survivors have relied on cross-sectional designs. Although cross-sectional designs provide valuable information about correlates of current stress-related problems, they have, at least, one important limitation. It is difficult to interpret the direction of the causal relation between stress-related problems and their correlates. As a result, the information they provide in relation to early detection of long-term stress-related problems is limited.

Several considerations justify the identification of factors that can predict long-term stress-related problems and can improve screening accuracy: (a) long-term cancer survivors have limited contact with the oncology setting and this results in fewer opportunities to detect stress-related problems as compared to patients undergoing active treatment [8]; (b) healthcare professionals identify less than one-third of patients displaying moderate or severe emotional distress [9,10]; (c) undetected and untreated stress-related problems are associated with higher mortality and reduced functioning (e.g., not returning to work) and poor quality of life in many medical populations [11]; and (d) most healthcare systems cannot afford to offer psychosocial treatment to all patients, nor is this indicated [12]. Determining valid prognostic factors and routine screening to detect them can inform clinical efforts to identify vulnerable individuals at an early point and can direct interventions to minimize or prevent psychological problems in the long-term.

In the course of a longitudinal study that tested a brief coping-skills intervention for breast cancer patients 3 months after diagnosis [13,14], we had an opportunity prospectively to investigate predictors of stress-related problems 6 years later in long-term survivors. We used data collected at 3, 7, 11, and 15 months after diagnosis to predict stress-related problems at the 6-year follow-up. We attempted to undertake a comprehensive examination and, therefore, included potential risk and protective factors relevant to stress-related problems. Research, to date, has identified several variables that place breast cancer patients at significant risk for stress-related problems and others that act as protective factors, reducing the likelihood of psychological morbidity. The following variables appear to place breast cancer survivors at increased risk for emotional distress and for intrusion and avoidance: (a) fear of the future due to cancer [15]; (b) appraisal of the cancer as highly stressful [16]; (c) poor perceived health [17,18]; and (d) coping strategies that aim to avoid the stressor (e.g., escape or avoidance) [19–23].

The following protective factors appear to reduce the risk that breast cancer patients will experience emotional distress or intrusion and avoidance: (a) social support [18,24–26]; (b) optimism [18,20,21]; and (c) coping strategies that are active and aim to manage the stressor (e.g., problem solving, positive reframing, seeking social support) [20–23].

Although less frequently investigated, we examined two additional variables because of their potential as risk factors: (a) initial stress-related problems following the cancer diagnosis [22,27,28] and (b) the occurrence of a second cancer during the period of survivorship. Higher levels of stress-related problems are reported after recurrence, metastases, or new primaries as compared to circumstances when such developments have not occurred [29–31], but studies of long-term breast cancer survivors have not typically examined the impact of second-cancer experiences on stress-related problems [15,22,32].

We hypothesized that the following factors measured at 3, 7, 11, and 15 months after the initial diagnosis of cancer would predict increased stress-related problems in women 6 years after their cancer diagnosis: (a) an appraisal of cancer as highly stressful; (b) fear of the future due to cancer; (c) heightened stress-related problems; (d) poor perceived health; and (e) avoidant coping. We posited that the occurrence of a second cancer would predict increased stress-related problems in women 6 years after their cancer diagnosis. We hypothesized that the following factors would predict decreased stress-related problems: (a) optimism; (b) social support; and (c) active coping.

In addition to identifying risk and protective factors prospectively, the repeated-measures aspect of the dataset allowed us to determine the number of measurement points that provide incrementally valid predictors of stress-related problems that persist during long-term survivorship. Our goal was to identify the most parsimonious set of predictors and the minimum number of measurement occasions at which to undertake screening efforts to identify breast-cancer survivors at risk for long-term stress-related problems. Such information offers the highly desirable benefit of allowing for the timely delivery of preventive interventions, thereby minimizing emotional distress and intrusion and avoidance.

Methods

Participants

Participants were a cohort of women, newly diagnosed with breast cancer, in treatment at the Sir Mortimer B. Davis-Jewish General Hospital in Montreal, Quebec, Canada. At 3 months post-diagnosis, 146 participants participated in a randomized clinical trial to evaluate a new supportive, group intervention. The response rate at inception was 33% [13]. The authors were able to compare participants and nonparticipants in terms of representativeness, as they reported on the entire cohort of patients diagnosed with breast cancer during the accrual phase. This is in marked contrast to most published studies, which rely on referrals from the health care team or a public relations approach. Participants and nonparticipants did not differ significantly for any of the sociodemographic variables examined [13]. Participants were randomized to one of four experimental conditions: (a) five 90-min group sessions of a coping skills intervention; (b) the