Quality of Life and Breast Cancer: Relationship to Psychosocial Variables

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The aim of this article is to shed more light on the relationship between quality of life and aspects of the psychosocial experience for women with breast cancer. The literature is briefly reviewed, including highlights of the psychosocial consequences of cancer, an exploration of the relationship of psychosocial variables to cancer, and a brief review of psychosocial interventions for cancer. Further, preliminary findings of an on-going NCI study are introduced. Finally, clinical implications are discussed. The purpose of this article is to shed more light on the relationship between quality of life and aspects of the psychosocial experience for women with breast cancer. The literature is briefly reviewed, including highlights of the psychosocial consequences of cancer, an exploration of the relationship of psychosocial variables to cancer, and a brief review of psychosocial interventions for cancer. Further, preliminary findings of an on-going NCI study are introduced. Finally, clinical implications are discussed.

This article was supported in part by the National Institute of Health, National Cancer Institute, Bethesda Maryland (grant number: 1 RO3 CA83342–01). The authors would like to acknowledge the individuals who provided assistance in this research. Our greatest appreciation is extended to the women participating in the study. We also are most grateful to Jon Kabat-Zinn, Saki Santorelli, Elana Rosenbaum, Ferris Urbanowski, and the staff of the Center of Mindfulness in Medicine, Health Care and Society, University of Massachusetts Medical Center for invaluable guidance and support. We express appreciation to Joseph Denucci and the staff at Miraval for generously donating resources. We also deeply thank Elana Rosenbaum and Natasha Korshak for their contribution to the MBSR intervention. Finally, we would like to acknowledge Hal Arkowitz for his valuable editorial comments.

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of this article is to provide a context and foundation on which future researchers and clinicians can build. Ultimately, we suggest that the biomedical model of disease, though crucial, does not take into account all of the complex factors involved in cancer. The current literature lends support to the argument that a broader, more integrative framework, which includes psychosocial factors, is needed. © 2001 John Wiley & Sons, Inc. J Clin Psychol 57: 501–519, 2001

Keywords: breast cancer; psychosocial variables

The diagnosis of breast cancer, the most common type of cancer among American women, elicits greater distress than any other diagnosis, regardless of prognosis (National Cancer Institute [NCI], 1997; Stechlin & Beach, 1966; Vinokur, Threatt, Caplan, & Zimmerman, 1989). The aim of this article is to shed more light on the relationship between quality of life and aspects of the psychosocial experience for women with breast cancer. Further, we hope to provide information that will help health care professionals better understand quality of life and psychosocial issues for women with breast cancer in attempt to augment clinical interventions and care. Ultimately, we suggest that the biomedical model of disease, though crucial, does not take into account all of the complex factors involved in cancer. We posit that a broader, more integrative framework, which includes psychosocial factors, is needed.

We first highlight psychological and psychosocial issues associated with breast cancer, and then underscore specific psychosocial variables that may play a role in the disease. Further, we bring to light the current literature of psychosocial interventions for patients with cancer. We then introduce preliminary research from an on-going study funded by the National Cancer Institute (NCI). This is a pilot study intended to explore psychosocial factors and quality of life, preparatory to embarking on a larger scale, long-term study. Finally, we discuss clinical implications in an attempt to lend greater understanding to the complexities surrounding the relationship between quality of life and psychosocial issues for women with breast cancer.

Psychosocial Issues and Breast Cancer

Researchers in the field agree that in general the diagnosis of cancer elicits greater distress than any other disease. The literature documents numerous negative psychological consequences for patients including depression (Meyerowitz, 1980), anxiety (Ervin, 1973), and hostility and anger (Vachon & Lyall, 1976). Earlier observational reports (Bard, 1955; Bard & Sutherland, 1952; Renneker & Cutler, 1952) were confirmed by cross-sectional studies finding high levels of depression, sadness, anger, frustration, panic and anxiety, and suicidal ideation (Grandstaff, 1976; Jamison, Wellisch, & Pasnau, 1978).

Depression is the most prevalent psychological problem for cancer patients (Derogatis et al., 1983; Lansky et al., 1985), and anxiety is second in frequency (Derogatis et al., 1983). One-third of women may experience considerable psychological morbidity in the first two years after treatment (Dean, 1987; Morris, Greer, & White, 1977). Those at greatest risk are women with a history of psychiatric illness (Bloom et al., 1987; Penman et al., 1987).
Distress varies in level of intensity depending on severity of disease as well as phase of treatment (Simonton & Sherman, 1998). The greater levels of distress are positively associated with greater severity of disease (Maunsell, Brisson & Deschenes, 1992; Schag, Ganz, Polinsky, Fred, Hirji, & Peterson, 1993). Further, a patient’s phase of life has a significant impact on adjustment: younger patients demonstrate greater levels of distress than older patients (Simonton & Sherman, 1998; Vinokur, Threatt, Vinokur-Kaplan, & Satariano, 1990). In breast cancer patients, advanced age has been associated with increased social activities and contacts, with better mental health, perceived quality of life, and functioning (Vinokur et al., 1989).

The literature indicates that the strongest concerns for women with early-stage breast cancer are those relating directly to cancer as a health and life threat, the most salient being the possibility of recurrence (Spencer et al., 1999). The experience of breast cancer often forces women to confront fear and uncertainty, and most overwhelming, the idea of their own mortality. These issues bring up many existential questions, for example “What is important in my life?” and “What meaning does my life have?”

Other high-rated concerns include sickness and potential damage from undergoing adjuvant therapies, pain, and premature death. Concerns regarding personal relationships include “not being able to live out important relationships, . . . having life with a partner cut short” (Spencer et al., 1999). Women with children often struggle with the following questions, “What should I tell them?” “Do I have the resources to fight this disease and to continue to parent my children at the same time?” “How will this effect their growth and development?” “What will happen to them if I die?” (Oktay, 1998, p. 7).

Breast cancer also elicits concerns regarding a woman’s view of herself. Many treatments for cancer challenge a woman’s body image and sexuality (Oktay, 1998). “The systemic treatment of breast cancer with chemotherapy or hormonal therapy may also affect self-image, fertility, and libido—all important components of ‘femininity’” (p. 6). The combined effects of breast surgery, loss of hair, decreased libido, and early menopause constitute a serious threat to a woman’s self-image. In addition, as the rate of breast cancer has increased in younger women, issues of femininity arising from the impact of disease on fertility are increasingly important (Oktay, 1998).

The experience of breast cancer can also create challenges for a marriage or significant relationship. Difficulties include communication problems, difficulty coping and sexual dysfunction (one study found that approximately 50% of women with cancer had at least one diagnosed sexual dysfunction during the posttreatment year) (Anderson, Anderson, & DeProesse, 1989). However, research suggests that when marriages are strong before the development of breast cancer, the disease does not usually disrupt the relationship, and may result in an even closer relationship (Oktay & Walter, 1991). And yet, in a troubled relationship, the disease may prove too stressful for the couple to handle (Oktay, 1998).

Further, it is crucial not to overlook the importance of a caring husband or partner, as support from the woman’s husband is usually ranked the most important (Holland & Rowland, 1991). Marital quality has been identified as a critical contributor to quality of life in women with breast cancer (Zahlis & Shands, 1991).

**Positive Psychological Consequences**

It has been suggested that the field of psychosocial oncology has focused on pathological outcomes in response to cancer and has been insufficiently sensitive to the possibilities for personal growth and transformation. For example, Andrykowski and colleagues (1993)
propose that cancer should not be viewed as a stressor with uniformly negative outcomes, but rather as a transitional event, which creates the potential for both positive and negative outcomes. Studies of psychosocial adjustment in individuals with a history of cancer have largely focused upon assessment of negative psychosocial sequelae (Schag & Heinrich, 1989; Watson et al., 1991). Recently, however, a shift has occurred that is beginning to explore the potential for positive sequelae (Andrykowski, Brady, & Hunt, 1993).

The current literature suggests that approximately half to two thirds of those diagnosed with breast cancer handle it well psychologically (Baker, Marcellus, Zabora, Poland, Jodrey, 1997; Spiegel, 1996). In fact, some individuals with a history of cancer report renewed vigor in their approach to life, and stronger interpersonal relationships (Anderson, 1986; Cella & Tross, 1986). For example, Tempelaar and colleagues (1989) found that cancer patients reported more positive and fewer negative social experiences than a comparison group of healthy “normals.” Further, Collins and colleagues (1990) interviewed 55 cancer patients who were within five years of the initial diagnosis or cancer recurrence and found widespread reports of significant positive changes in personal relationships as well as in views of the self and in life priorities.

In a study of potential bone marrow transplant recipients, patients reported an improved outlook on life, enhanced relationships, and greater satisfaction with religious concerns (Andrykowski et al., 1993). The authors note that cancer should not be viewed as a homogeneously negative event, but as a “psychosocial transition, i.e. an event with significant negative implications that can nevertheless cause individuals to restructure their attitudes, values, and behaviors, and thus can serve to trigger positive psychosocial change” (p. 274).

It is important to note that these findings should not obscure the fact that the experience of breast cancer remains a major stressor (Carver et al., 1993). And yet, psychosocial cancer research could benefit from adopting a more inclusive conceptualization of the psychosocial impact of cancer. Both research and clinical work with cancer patients should reflect the twin goals of minimization of distress as well as fostering positive psychological, behavioral, and interpersonal change.

**Relationship of Psychosocial Variables to Cancer**

The experience of cancer is different for each individual. Research, however, suggests that specific psychosocial factors play a role in disease onset and progression as well as psychological adjustment. Below, we briefly highlight some of the important variables.

**Control.** Research suggests that an organism’s perception of control during stressful events is very important to both psychological and physical health. For example, cancerous tumor growth has been found to be enhanced in rats exposed to inescapable shock compared to tumor growth in rats given escapable shocks (Sklar & Anisman 1979; Visintainer, Volpicelli, & Seligman, 1982). Several studies have shown that increasing individuals’ sense of control can have profound health implications. Rodin and Langer (1977) found that nursing home patients given control over their schedule of activities lived considerably longer than a matched comparison group.

The diagnosis of breast cancer can elicit feelings of helplessness and loss of control (Anderson, Kiecolt-Glaser, & Glaser, 1994; Peterson & Stunkard, 1989). Recent research suggests that responding to breast cancer with feelings of helplessness/hopelessness increases risk of relapse and death (Watson, Haviland, Greer, Davidson, & Bliss, 1999). This has been supported by earlier studies finding that feelings of loss of control in response to breast cancer is a significant predictor of first recurrence and death from the
disease (Pettingale, Morris, Greer, & Haybittle, 1985), and that having a helpless attitude toward the disease is related to poor prognosis (Antoni & Goodkin, 1988; DiClemente & Temoshok, 1985; Jensen, 1987; Pettingale et al., 1985). In addition, loss of control is associated with increased anxiety and depression (Derogatis et al., 1983; Greer & Silberfarb, 1982; Meyerowitz, 1983). On the other hand, maintaining a positive sense of control in the face of breast cancer was significantly related to adaptation at six-month follow-up (Ell, Nishimoto, Morvay, Mantell, & Hamovitch, 1989).

Given the substantial findings in the area of control and cancer, it is important to explore the construct of control in greater depth. It has been argued (Shapiro, Schwartz, & Astin, 1996) that the relationship between control and health is not a simple linear one: “control is good, and the more control one has the better.” Acceptance (positive yielding) is a unique feature of control that is often overlooked in Western psychology (Shapiro & Astin, 1998), and yet, the literature demonstrates that acceptance is a crucial component in gaining an optimal sense of control. For example, Astin and colleagues (1999) found that women with breast cancer using a balanced mode of control including both assertiveness and acceptance showed the best psychosocial adjustment. Further, Carver and colleagues (1993) found that acceptance was significantly linked to lower levels of distress in women with early-stage breast cancer. The authors suggest that “ultimately the accommodating side may prove to be fully as important, or even more important . . . [as the] active striving side” (p. 387).

Stress. Stress has been shown to have deleterious effects on one’s physical and mental well-being (McCabe & Schneiderman, 1985; Selye, 1976). Stress has been associated with increases of depression, anxiety, and psychological distress (DeLongis, Folkman, & Lazarus, 1988; Kanner, Coyne, Schaefer, & Lazarus, 1981). Further, stress has been shown to negatively effect physical health. For example, through the use of viral challenge studies where patients are purposely exposed to various viral agents (such as the common cold), Cohen and colleagues found that patients who report being under stress are more likely to develop a clinical cold than those under low stress (Cohen, Tyrell, & Smith, 1991). Specifically related to cancer, a meta-analysis of psychosocial variables related to breast cancer found significant effect sizes for an association between development of breast cancer and reported stressful life events (McKenna et al., 1999). Further, in a study of 116 postsurgical breast cancer patients, Andersen and colleagues (1989) found that stress levels significantly modulated immune parameters that involve NK cell activity.

Repression/Denial. In a meta-analytic review of the literature of psychosocial factors and the development of breast cancer, McKenna and colleagues (1999) found significant effect sizes for an association between breast cancer and the use of a coping strategy based on denial/repression.

A study by Jensen (1983) provides important evidence supporting the idea that repression involves disregulation of the immune system that, in turn, influences cancer. In a prospective study of women with breast cancer, Jensen found that at follow-up subjects with a repressive coping style and reduced levels of self-reported negative emotions had poorer outcomes (including death) than those who did not meet this profile. Specifically, Jensen demonstrated that repression of negative emotions is associated with an aggravated course of breast cancer. It is important to highlight that the psychological variables were two times more effective at predicting clinical outcomes than were the biological indicators assessed.

Carver and colleagues (1993) found that overt denial was consistently related to higher levels of concurrent distress. Further, denial predicted distress prospectively at the
six-month follow-up. Stanton and Snider (1993) found that cognitive avoidance/denial was detrimental to women with breast cancer prebiopsy, postbiopsy, and at follow-up. Their findings demonstrated that denial was an important predictor of high distress and low vigor. They concluded “avoidance, even over a brief period, may be maladaptive when the stressor is severe and potentially chronic” (p. 22).

The relationship between repression/denial and cancer remains tentative and sweeping conclusions are not justified, however, the potential importance of repressive coping requires further investigation.

**Emotional Expression.** Emotional expression, sometimes considered the antithesis of repression, is the ability to acknowledge and express emotions. The literature demonstrates a positive association between emotional expression and health (Pennebaker, 1989; Pennebaker & Beall, 1986). Findings indicate that emotional expression of negative and traumatic events has a salutary influence on immune functions and resistance to illness. For example, in experimental studies, subjects who wrote their deepest thoughts and feelings about past traumas experienced enhanced T-cell responsivity (Pennebaker, Kiecolt-Glaser, Glaser, 1988) and improved overall health (Pennebaker, 1989; Pennebaker, & Beall, 1986) compared with control subjects who wrote about trivial events. Further, Temoshok (1985) found correlations between emotional expression and levels of tumor-infiltrating lymphocytes in melanoma patients. This research supports the hypothesis that health is facilitated not simply by “good” emotions, but by the expression of all emotions.

**Social Support.** Higher levels of social support have predicted significantly longer survival in several studies with localized or regional breast cancer (Cassileth et al., 1985; Funch, Marshall 1983; Reynolds & Kaplan, 1990; Spiegle, Bloom, Kraemer, & Gottheil, 1989). Further, emotional support has been consistently associated with better quality of life (Hegelsons & Cohen, 1996). The absence of a social support network has been tied to a higher incidence of cancer (Thomas & Duszynski, 1974) a more rapid course of illness (Reynolds & Kaplan, 1990), and increased depression (Woods & Earp, 1978). A prospective study examining the effects of social context on rate of survival from breast cancer found that women with increased support, particularly outside the home, had significantly higher rates of survival at a four year follow-up (Waxler-Morrison, Hislop, Mears, & Kan, 1991).

Despite the significance of social support to both psychological and physical well-being, Peters-Golden (1982) found that only 52% of breast cancer patients reported receiving adequate amounts of support. Clearly, social support is a psychosocial variable deserving attention.

**Spirituality.** Finally, spirituality may be another important variable in a cancer patient’s experience. Spirituality may buffer against the negative effects of life stressors. It has been demonstrated that spirituality can enhance physical and psychological well-being (Oxman, Freeman, & Manheimer, 1995), and predicts various health outcomes (Levin, 1994). In fact, Levin (1994) reviews more than 250 published empirical studies on the largely beneficial health effects of religious or spiritual practice. Because women with breast cancer face many stressors, it appears important to address their spiritual as well their cognitive, behavioral, and emotional needs in an attempt to buffer against the effects of stress.

In a review of over 200 studies, religious commitment was correlated with improved physical and functional status, reduced extent of psychopathology, greater emotional
well-being, improved coping, and strengthened social support (Matthews, Larson, & Barry, 1993; Matthews & Larson, 1995). Overall, these studies show that religious/spiritual beliefs typically play a positive role in adjustment and optimal health (Fitchett, Peterman, & Cell, 1996; Larson & Greenwold-Milano, 1995; Matthews, 1997). Further, several studies have found that spiritual factors influence health status variables, such as improved recovery and pain levels (Oxman et al., 1995; Pressman, Lyons, Larson, & Strain, 1990; Yates, Chelmer, James, Follansbee, & McKegney, 1981).

**Methodological Limitations**

Although the psychosocial oncology literature is strong, substantial limitations and unanswered questions remain. Much of the research has focused on heterogeneous samples of patients who vary widely across disease site (e.g., melanoma vs. breast cancer), stage of progression (e.g., localized vs. metastatic), and phase of illness (e.g., initial diagnosis vs. long-term survival). The challenges patients face vary widely across these dimensions, and therefore, it is crucial for research designs to take this into consideration.

Another limitation of the literature is that minorities have been dramatically under-represented in psycho-oncology research (Anderson, 1992). Further, although the research demonstrates the importance of the spousal relationship during the cancer experience, there is a lack of controlled research concerning couples or family interventions. Finally, a crucial question that remains unanswered is determining what these findings mean in terms of clinical intervention and care. It is yet unclear if precise psychosocial factors can be manipulated to effect quality of life and disease outcome. Despite these limitations, the current literature holds important clinical implications for the field that will be discussed later in the article.

**Psychosocial Interventions**

Although specific causal pathways are yet unclear, the literature does document the psychological and physiological benefit of numerous psychosocial interventions that have been employed to help persons with cancer cope with the stress of the disease (Simonton & Sherman, 1998). These include psychosocial support (Andersen, 1992); group psychotherapy (Spiegel & Bloom, 1983; Telch & Telch, 1986); self-help/self-care promotion (Braden, Mishel, & Longman, 1998); and, hypnosis, imagery and relaxation (Fawzy et al, 1993; Gruber et al, 1993; Post-White, 1993; Spiegel & Bloom, 1983; Walker et al., 1999). Evidence from multiple studies suggests these psychosocial interventions can improve mood (Cain, Kohorn, Quinlan, Latimer, & Schwartz, 1986; Cunningham & Tocco, 1989; Greer, Moorey, & Baruch, 992), physical functioning (Berglund, Boulund, Gustafson, & Sjoden, 1994), perceived meaning in life (Johnson, 1982), self-efficacy (Telch & Telch, 1986), and lessen illness-related difficulties (Berglund et al., 1994; Telch & Telch, 1986) in heterogeneous samples of patients with cancer.

In a 1995 meta-analysis (Meyer & Mark, 1995) of 45 randomized trials examining psychosocial interventions for adults with cancer, the authors concluded:

The cumulative evidence is sufficiently strong that it would be an inefficient use of research resources to conduct more studies . . . to ask the simple question: Is there an effect of [these psychosocial interventions] on the emotional adjustment, functional adjustment, and treatment-and disease-related symptoms of cancer patients. (p. 106)
Spiegel et al. (1989) conducted a prospective intervention study of patients with metastatic breast cancer. Findings demonstrated that a weekly support group meeting for one year enhanced patients’ psychosocial functioning and reduced pain as compared to a standard care treatment control group. Further, in a ten-year follow-up, the data reported that survival was significantly different, with a mean of 36.3 months in the intervention group compared with 18.9 months in the control group.

Another study, conducted by Fawzy and colleagues (1993) supported these findings. Early-stage melanoma patients assigned to a six-week psychosocial intervention demonstrated increases in coping skills, but no affect on negative mood states or immune function immediately postintervention. However, at six-month follow-up, the intervention group had significantly decreased negative mood states, and increased NK cell number and NK activity. Further, at a five-year follow-up, 91% of those in the intervention group had survived as opposed to only 71% in the control group.

Johnson (1982), randomized 52 patients with newly diagnosed or recurrent cancer to either a psycho-educational group intervention “I Can Cope” or a control group. The intervention group demonstrated decreased anxiety and increased perceived purpose and meaning in life compared to the control group.

Berglund et al. (1994) performed a prospective randomized study with 98 cancer patients who participated in a rehabilitation program focused on “starting again,” and 101 patients who served as controls. Subjects in the intervention improved significantly in physical training, physical strength, fighting spirit, body image, and sleep when compared with control participants.

Telch and Telch (1986) randomized 41 cancer patients with different diagnoses and stages of disease to a coping skills instruction group, an emotional support group or a no-treatment control group. The coping skills group showed consistent improvement in affective state, cognitive distress, communications, coping with medical procedures, and satisfaction related to work, social activities, physical appearance, sexual intimacy, physical and social activities. Patients in the emotional support group showed little or no improvement, while the control patients actually deteriorated in psychological functioning.

In a similar study, Cunningham and Tocco (1989), randomly assigned 60 cancer patients with mixed diagnoses to one of two group treatments: a support group which included coping skills training (psychoeducational), or a support group alone. In this study, both intervention groups showed a significant improvement in affective state compared with the no-treatment control group. The psychoeducational group, however, demonstrated a greater gain, supporting the above findings of Telch and Telch.

Despite these promising findings, additional exploration is needed to confirm whether psychosocial approaches can contribute to improved disease outcome, and to determine the underlying mechanisms. Further, it is yet unclear if immunological changes generated by psychosocial interventions are sufficiently robust to alter clinical status. Ultimately, interventions should target specific psychosocial variables that have been proven to play a role in both quality of life and perhaps even survival.

Introduction to Current NCI Study

The current study is part of a larger ongoing psychosocial intervention study funded by the NCI. The focus of this component of the study was to develop a preliminary picture of women with early-stage breast cancer within two years posttreatment. Correlations between quality of life and psychosocial variables are explored. Further, we examine the importance of the psychological construct of control for women with breast cancer.
Methods

Participants

The sample consisted of 63 women diagnosed with stage II breast cancer who were currently cancer free. Patients were recruited for a larger on-going project comparing a structured stress-reduction intervention to an unstructured stress-reduction group (the control). Inclusion criteria required that patients be female, between 18–75, fluent in English, have a history of stage II breast cancer, currently cancer free, and within two years posttreatment.1

Justification for Stage of Cancer. This study focused on women with stage II breast cancer. Although not the most advanced stage of disease, women with stage II breast cancer experience a great deal of distress due to their diagnosis, treatment, and the fear of breast cancer recurrence or metastases. The literature documents that women with stage II breast cancer may suffer from feelings of anxiety, depression, difficulty sleeping, feelings of hopelessness, and loss of control. In addition, by restricting the study to a somewhat homogeneous sample, the number of confounding variables is reduced and the results are more easily interpreted.

Justification for Phase of Treatment. Although breast cancer can cause distress at any moment after diagnosis, there appear to be peak periods throughout the patient’s experience. Data indicate that the cancer diagnostic period is one of acute distress (Anderson et al., 1989), yet as many as one-third of patients with newly diagnosed breast cancer continue to experience considerable psychological morbidity in the first two years after initial treatment (Barber, 1978; Blalock, 1972).

Participants were recruited from the practices of all medical oncologists in the Tucson community. Approximately 30% of the women who met eligibility criteria agreed to participate in the study. The participants ranged in number of months post-treatment from 2 to 25 (mean = 13.4, SD = 6.9). The women ranged in age from 38 to 77 (mean = 57, SD 9.7). Forty-seven women were married or in an equivalent relationship, three were divorced, four widowed, and nine single. Women on average had two children, ranging from zero to six children. Fifty-four of the women were non-Hispanic white, five Hispanic, and two African American. Twelve women had completed graduate school, 19 were college graduates, 31 high school graduates. Thirteen women worked part time, 22 full-time, 19 were retired, and 9 were on disability.

Self-Report Measures

All participants completed a battery of questionnaires including measures of quality of life, spiritual experience, psychological distress, sense of control, openness to experience, anxiety, depression, sense of coherence, marital quality, and worry.

Emotional Well-Being. Profile of Mood States Scale (McNair, Lorr, & Droppleman, 1981): a 65-item Likert intensity rating of mood descriptors generating six subscale scores on depression, tension–anxiety, anger–hostility, confusion, vigor, fatigue. Reliability is reported at .9.

1A one-month flex period was allowed for the eligibility criteria. One participant greater than 24 months posttreatment was included (25 months posttreatment).
Depression. Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a widely-used 21-item self-report measure that can serve as a quantitative index of the severity of depressive symptoms during the past week.

General Worry. Penn State Worry Questionnaire (Meyer, Miller, Metzger, & Borkovec, 1990). This 26-Item inventory is Likert scale, and assesses the trait of worry. It has been found to be psychometrically sound with good validity, reliability, and internal consistency.

State and Trait Anxiety. The State-Trait Anxiety Inventory (Form Y)—STAI Form 1 (Spielberger, Gorsuch, & Lushene, 1970) 40-item self-report instrument was used to measure both state and trait anxiety using a 1–4 Likert rating scale.

Spirituality. The Index of Core Spiritual Experiences—INSPIRIT, developed by Kass and colleagues (1991), is a seven-item scale designed to assess two characteristic elements of core spiritual experiences: (1) “a distinct event and a cognitive appraisal of that event which resulted in a personal conviction of God’s existence (or of some form of Higher Power as defined by the person)”; and (2) “the perception of a highly internalized relationship between God (Spiritual core) and the person.” Scores calculated for this measure range from 1–4 (with higher scores reflecting a greater number of spiritual experiences). This instrument demonstrates high internal reliability, Kass and colleagues (1991) report an alpha coefficient of .9.

Quality of Life. The Functional Assessment of Cancer Treatment-Breast (FACIT-B) (Brady et al., 1997) consists of 36 items for evaluating functional impairment and the perceived effect of that impairment on quality of life. It is self-administered and ranked on a five point Likert scale. The FACIT-B is comprised of five areas of quality of life: physical well being, social/family well-being, emotional well-being, and functional well-being, and nine additional items specifically related to breast cancer. The nine breast cancer–specific items include questions related to appearance, sexuality, treatment side effects, and stress/illness. The measure is reliable, and reports a Cronbach’s coefficient alpha of .9.

Control. Shapiro Control Inventory (SCI) (Shapiro, 1992): this 187-item instrument was adapted for the present study to assess one’s mode of control describing individual’s characteristic cognitive/behavioral style of responding to control related issues along four different quadrants: positive assertive, positive yielding (acceptance), negative assertive, negative yielding. Studies show that the internal reliability of these subscale range from .70 to .89; test–retest reliability ranges from .67 to .93.

Marital Quality Scale. (Hendrick, 1998) Hendrick’s Relationship Assessment Scale, is a self-report measure consisting of 7 questions to assess relationship satisfaction and quality. The scale reports good internal consistency (alpha = .86).

Sense of Coherence. (Antonovsky, 1987) A 29-item scale with high reliability and validity measuring the construct of sense of coherence consisting of comprehensibility, manageability and meaningfulness.

Procedure
If eligible, women came to the Arizona Cancer Center for an initial intake interview with the research associate. As part of the larger ongoing study, the nature of the study and the
process of randomization were explained to the participants and informed consent was obtained. Using an open-label study design, participants were then randomized into the experimental or the control group. Two weeks prior to the beginning of the intervention, participants completed a set of psychosocial questionnaires.

Results

What follows are the results from the preliminary analyses conducted as part of the larger project.

Quality of Life and Psychosocial Variables

See Table 1.

Control and Psychosocial Variables

Positive Assertive and Positive Yielding. The positive assertive mode of control was positively correlated with sense of coherence ($r = .55, p < .001$), vigor ($r = .42, p = .001$), and total quality of life ($r = .44, p < .001$). This mode of control was negatively correlated to depression ($r = -.34, p = .007$), anger and hostility ($r = -.27, p = .035$), fatigue ($r = -.26, p = .046$), confusion ($r = -.44, p < .001$), tension ($r = -.37, p = .003$), and state and trait anxiety ($r = -.42, p = .001$). The positive yielding mode of control was positively correlated with sense of coherence ($r = .41, p < .001$), total quality of life ($r = .35, p = .006$), and vigor ($r = .28, p = .027$). It was negatively correlated with trait anxiety ($r = -.33, p = .008$).

Table 1
Correlation Matrix of Quality of Life and Psychosocial Variables

<table>
<thead>
<tr>
<th></th>
<th>Total QOL</th>
<th>Physical QOL</th>
<th>Social QOL</th>
<th>Emotional QOL</th>
<th>Functional QOL</th>
<th>Breast Cancer QOL</th>
</tr>
</thead>
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<tr>
<td>Marital quality</td>
<td>.32*</td>
<td>-.01</td>
<td>.5**</td>
<td>.04</td>
<td>.16</td>
<td>.37*</td>
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<td>Sense of coherence</td>
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<td>.7**</td>
<td>.49**</td>
<td>.6**</td>
<td>.47**</td>
</tr>
<tr>
<td>Vigor</td>
<td>.6**</td>
<td>.6**</td>
<td>.33**</td>
<td>.51**</td>
<td>.66**</td>
<td>.32**</td>
</tr>
<tr>
<td>Spirituality</td>
<td>.13</td>
<td>.10</td>
<td>.03</td>
<td>.24</td>
<td>.18</td>
<td>.03</td>
</tr>
<tr>
<td>Positive assertive control</td>
<td>.44**</td>
<td>.16</td>
<td>.43**</td>
<td>.31*</td>
<td>.44*</td>
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<tr>
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<td>.35**</td>
<td>.09</td>
<td>.38**</td>
<td>.43**</td>
<td>.36**</td>
<td>.08</td>
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<td>-.12</td>
<td>.11</td>
<td>-.27*</td>
<td>-.09</td>
<td>-.13</td>
<td>-.12</td>
</tr>
<tr>
<td>Anger/hostility</td>
<td>-.63**</td>
<td>-.35**</td>
<td>-.58**</td>
<td>-.42**</td>
<td>-.47**</td>
<td>-.5**</td>
</tr>
<tr>
<td>State anxiety</td>
<td>-.7**</td>
<td>-.45**</td>
<td>-.63**</td>
<td>-.7**</td>
<td>-.64**</td>
<td>-.34**</td>
</tr>
<tr>
<td>Trait anxiety</td>
<td>-.7**</td>
<td>-.46**</td>
<td>-.50**</td>
<td>-.7**</td>
<td>-.64**</td>
<td>-.46**</td>
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<tr>
<td>Depression</td>
<td>-.77**</td>
<td>-.57**</td>
<td>-.53**</td>
<td>-.59**</td>
<td>-.73**</td>
<td>-.51**</td>
</tr>
<tr>
<td>Fatigue</td>
<td>-.49**</td>
<td>-.56**</td>
<td>-.36**</td>
<td>-.33**</td>
<td>-.33**</td>
<td>-.4**</td>
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<tr>
<td>Confusion</td>
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<td>-.38**</td>
<td>-.41**</td>
<td>-.48**</td>
<td>-.41**</td>
<td>-.41**</td>
</tr>
<tr>
<td>Tension</td>
<td>-.7**</td>
<td>-.52**</td>
<td>-.54**</td>
<td>-.6**</td>
<td>-.5**</td>
<td>-.5**</td>
</tr>
<tr>
<td>Emotional distress</td>
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<td>-.48**</td>
<td>-.57**</td>
<td>-.41**</td>
<td>-.37**</td>
<td>-.49**</td>
</tr>
<tr>
<td>Worry</td>
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<td>-.48**</td>
<td>-.40**</td>
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<td>-.54**</td>
<td>-.38**</td>
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</table>

*p < .05.

**p < .01.
Negative Assertive and Negative Yielding. The negative assertive mode of control was positively correlated with vigor ($r = .26, p = .04$). The negative yielding mode of control was significantly correlated with total emotional distress ($r = .32, p = .013$), and negatively correlated with social quality of life ($r = -.27, p = .04$).

Discussion

This study focused on quality of life for women with stage II breast cancer within two years posttreatment. The data presented are the first look at data from a larger on-going project. Therefore, although the findings are interesting, it is important to emphasize that they are not the final statement. Within this context, we discuss the results of our preliminary analyses.

Quality of life was correlated with psychosocial variables. Greater quality of life was significantly correlated with sense of coherence, marital quality, vigor, and the two positive modes of control. Lower quality of life was correlated with greater amounts of depression, anxiety, anger and hostility, and general emotional distress. These findings support the hypothesis that psychosocial variables are related to achieving optimal quality of life (Cotton, Levine, Fitzpatrick, Dold, & Targ, 1999). However, as the findings are correlational, it is essential not to imply causation.

Future clinical intervention studies are needed to determine if specific psychosocial variables have an impact on quality of life. For example, support groups are widely practiced; however, rarely are psychosocial variables such as sense of control explicitly targeted. It would be important to determine if targeting this variable significantly effected outcome.

Another interesting finding was that greater use of the two positive modes of control was associated with greater quality of life and emotional well being. Positive assertive control was related to greater sense of coherence, vigor, and overall quality of life as well as lower depression, anger and anxiety. Positive yielding (acceptance) was related to greater sense of coherence, vigor, and overall quality of life as well as lower anxiety. This is consistent with Cotton and colleague’s (1999) finding that quality of life was related to a measure of acceptance similar to the positive yielding mode of control.

Further, higher use of the negative yielding mode of control (hopelessness/helplessness) was significantly related to greater emotional distress, suggesting that passively resigning or giving up may increase distress levels. This finding is consistent with the literature that breast cancer patients who exhibit helplessness and resignation have an increased risk of psychological distress (Shapiro et al., 1997) and even relapse and death (Watson, Haviland, Greer, Davidson, & Bliss, 1999). Contrary to our hypothesis, the negative assertive mode of control was positively correlated with vigor. This may suggest that in some cases a negative assertive mode of control may be adaptive, especially in increasing energy and defeating helplessness.

The preliminary findings of this study contribute to the literature by examining quality of life in conjunction with important psychosocial variables (sense of control, psychological distress, and sense of coherence) in a homogeneous sample of women (early stage breast cancer within two years posttreatment). A strength of the study is the homogeneity of the sample of women. Through conducting research with a select sample of women with the same stage of breast cancer and the same phase of treatment, the variance that might be evidenced in a more heterogeneous sample is reduced. Further, the study confirms the existing literature that quality of life is significantly related to psychosocial variables, reinforcing the need for future research to examine the specific independent effects of targeting psychosocial variables (e.g., sense of coherence, sense of...
control) in clinical interventions. Finally, although the construct of control has been addressed in other studies, this study is unique in that it looks at both the assertive/change mode of control as well as the less studied accepting/letting go mode of control.

On the other hand, it is crucial to emphasize the preliminary and tentative nature of these findings. Further, our small, homogeneous sample does restrict the generalizability of our study to other stages of breast cancer and other phases of treatment as well as to people with other cancers or illnesses. In addition, our sample included women who were primarily Caucasian from a single geographic area, which also restricts the applicability of these findings to other populations.

Further, a large number of measures were used compared to the relatively small number of subjects. Given that these measures were all self-report, there is a possibility of considerable overlap and intercorrelation among them. Therefore, individual correlations with quality of life must be viewed as more exploratory than definitive. Analyses that employ procedures such as factor analysis and structural equations modeling, will be useful in exploring the direct and indirect relationships among these variables.

Clinical Implications

There are several directions in which the field of psychosocial oncology should continue. It appears crucial that health care professionals provide patients with avenues for dealing with intrapersonal issues (e.g., sexuality), interpersonal issues (e.g., family relationships), and existential issues (e.g., confronting issues of mortality). Further, interventions should attempt not only to reduce psychological distress, but also to enhance participants’ potential for growth and transformation as suggested by the positive psychology literature (Andrykowski et al., 1993). Finally, building upon the literature indicating a strong association between psychosocial variables and disease outcome/adjustment, special consideration should be directed toward specific variables such as sense of control, stress, repression, emotional expression, and social support.

It is promising that potentially malleable psychosocial variables (e.g., sense of control, emotional expression) are correlated with quality of life in women with breast cancer. However, to date, the majority of the findings are correlational, thereby limiting firm conclusions. For example, it is impossible to determine from our data if perceptions of control increase quality of life, or if perceptions of control stem from current quality of life and adjustment.

And yet, it is indisputable that a relationship exists between psychosocial variables and quality of life in women with breast cancer. This suggests the necessity of clinical intervention studies aimed at increasing adaptive variables (e.g., sense of coherence, acceptance) and decreasing maladaptive ones (e.g., depression, denial) to determine if changing these variables can affect quality of life. The literature needs more rigorously designed studies to provide accurate data about health-promoting psychological processes, thereby developing a strong scientific basis for future intervention.

Conclusion

Considerable advances have been made in our understanding of the nature and intensity of the psychosocial challenges confronting women with breast cancer as they transition through their illness. The literature demonstrates a relationship between quality of life and psychosocial variables. Further, advances have been made linking psychosocial interventions to enhance psychological health, immune function, and even survival. We believe, therefore, that one of the most salient factors involved in comprehensive care for women...
with breast cancer is acknowledging the significant role psychosocial variables may play on both psychological and physiological well-being. This implies that health care professionals must recognize and take into consideration the importance of psychosocial variables and share this understanding with their patients.

Future research, amenable to statistical analyses such as path analysis and structural equations modeling, is needed to determine precisely which psychosocial variables are effective in promoting greater health. From this data more effective interventions that address the whole person, including specific psychosocial variables, can be developed. This transition to a more integrative and systemic approach to health is a critical shift toward providing more humane and holistic care for breast cancer patients, and ultimately for all patients.

References


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