A Social Cognitive Perspective on Coping With Cancer: Theory, Research, and Intervention

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Abstract

With increases in the number of cancer survivors, many persons now experience cancer as a chronic disease followed by adaptation to a new reality of what is normal in their lives. In response, cancer survivorship researchers have begun attending to the multidimensional needs of survivors, including the need to promote optimal psychological adaptation and health. Theoretical models of well-being that account for the complexity of survivorship issues are needed. We present a social cognitive model of restorative well-being as a framework for reviewing recent research on coping with early stage adult cancer (i.e., stages I and II) and optimizing post-treatment adjustment. We focus on research on cancer-related coping strategies, efficacy beliefs, personality traits, and environmental supports, which have been linked to adjustment outcomes and which may inform psychosocial interventions. By grounding this research in a theoretical base, we highlight the potential for counseling psychologists’ contributions to cancer survivorship research.

Keywords

health psychology, content, prevention/well-being, adults, populations

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Few life experiences can be the source of more dread and angst than receiving an adult cancer diagnosis, with the existential threats that it entails and the whirl of decisions, treatments, and challenges that it sets in motion. Popular accounts of the experience of coping with cancer are riveting, portraying the image of a disease that has typically been approached as a supreme test for medical science—with the emotional and psychological needs of patients and their families, and issues of post-treatment survivorship, often comprising distant considerations. In many ways, the race to find more effective biomedical treatments appears to have outpaced the search for ways to aid patients’ psychosocial well-being (Rowland, 2008). The predominant metaphor in recent times has been that of waging a war on cancer, on eradicating a ruthless and rapacious enemy within the patient. This contrasts to a growing recognition of the importance of attending to the holistic needs of the person in which this “enemy” resides both during and after treatment (National Research Council, 2008).

Yet this situation has been gradually changing in recent years. Due to advances in cancer detection, screening technologies, treatment, maintenance therapies, and supportive care, the population of long-term cancer survivors has been growing rapidly (Robinson, 2004; Rowland, 2008). This increase in survivors has led to a shifting conception of cancer as a chronic, rather than an acute, challenge for many persons and to the emerging field of cancer survivorship (Feuerstein, 2007; Rowland, 2008). Following treatment, many survivors show “no evidence of disease” (NED), but their health and well-being states are often similar to people living with chronic, long-term health concerns (Maher & Fenlon, 2010), with frequent usage of health care services (Nord, Mykletun, Thorsen, Bjoro, & Fossa, 2005).

This article aims to contribute to the field of cancer survivorship by presenting a social cognitive model of restorative well-being as a framework for reviewing recent research on coping with cancer and optimizing adjustment among adult early stage (I and II) disease cancer survivors. According to the National Cancer Institute’s Dictionary of Cancer Terms (2012), the concept of cancer survivorship encompasses:

- the physical, psychosocial, and economic issues of cancer, from diagnosis until the end of life. It focuses on the health and life of a person with cancer beyond the diagnosis and treatment phases [and] includes issues related to the ability to get health care and follow-up treatment, late effects of treatment, second cancers, and quality of life.

Although survivorship for some adult cancers has improved dramatically (e.g., an overall 5-year survival rate of 67% for adult cancer survivors;
Howlader et al., 2011), survivorship can vary greatly depending on such factors as the type and stage of cancer and the treatment utilized. The stage of cancer can depend on tumor size and whether it has spread to the lymph nodes or beyond, with a higher stage number indicating more extensive disease. For those with earlier stage cancers (Stages I and II), the survival rate is higher (e.g., the 5-year survival rates for breast cancer range from 88% for Stage I to 41% for Stage IIIB; for colon cancer, the range is from 74% for Stage I to 46% for Stage IIIB; American Cancer Society, 2012). However, the treatment utilized can result in a myriad of painful, distressing, and potentially life-threatening side effects, including the risk for secondary tumors when undergoing radiation (Wang, 2000).

Once diagnosed, cancer has the potential to affect nearly every aspect of an individual’s life, including the physical, psychological, interpersonal, vocational, and spiritual domains (Aziz, 2007). Compared with individuals who have not had cancer, survivors are more likely to report psychological problems, poorer health, and functional limitations, such as being unable to drive or work (Hewitt, Rowland, & Yancik, 2003). Individuals diagnosed at a younger age (before 45) have been found to be at the highest risk for experiencing psychological problems, which can persist over time (Arndt et al., 2004; Costanzo, Ryff, & Singer, 2009; Hewitt et al., 2003).

In a large-scale survey of self-identified cancer patients, 73% of whom were 2 or more years’ post-treatment, Wolff (2007) found that over 70% of respondents reported experiencing depression due to their cancer, 60% reported relationship problems, and 83% reported decreased income. Over a quarter indicated that they had insufficient resources for meeting their emotional and practical needs (e.g., work-related issues), and over half indicated that meeting the emotional and practical consequences of cancer were more difficult than the medical consequences. Yet despite these clearly adverse impacts, many respondents also demonstrated considerable resilience. Sixty-two percent reported that they were currently experiencing “good health,” and 47% indicated that experiencing cancer had improved their lives in some ways (Wolff, 2007).

In her article “What Are Cancer Survivors Telling Us?” Rowland (2008) notes the resilience of cancer survivors, the sense of personal growth and mastery that can attend survivorship, and the need to better understand factors that promote survivor well-being. Likewise, Feuerstein (2007) and Foster and Fenlon (2011) cite the need for theoretical models focusing on the positive aspects of cancer survivorship. Counseling psychology has, historically, been associated with a positive, strengths-based approach to health (Chwalisz & Obasi, 2008) and a “hygiological” tradition of “locating and developing personal and social resources and adaptive tendencies,” whether in the
context of normative or highly distressing life experiences (Super, 1955, p. 5). Yet despite the similar frameworks applied in the fields of cancer survivorship and counseling psychology, a recent survey of training directors of American Psychological Association–accredited counseling psychology doctoral programs estimated that less than 2% of counseling psychology faculty are engaged in cancer-related research (Raque-Bogdan, Torrey, Lewis, & Borges, in press). This level of faculty involvement may limit training and mentorship opportunities for counseling psychology students seeking to conduct research on cancer survivorship.

In this article, we hope to provide one bridge between the field of cancer survivorship and counseling psychology’s focus on well-being by offering a conceptual framework that may be used to organize part of the existing research on psychological adaptation to cancer, to stimulate further research on optimizing adjustment, and to serve as a theoretical platform for applied interventions. Accordingly, we begin with an overview of a social cognitive model of restorative well-being and use this model to organize and selectively review recent research on the cancer coping process, much of which lacks a well-defined theoretical base. We searched the databases PsycInfo, CINAHL, Health Source, Medline (searched via PubMed), Psychology and Behavioral Sciences Collection, and PubMed using the terms cancer, early stage, social cognitive, self-efficacy, coping, appraisal, optimism, and well-being for research that had been published in the last 10 years. We grounded this more recent research within the context of earlier, seminal works on variables relevant to the restorative well-being model. We end by considering future directions for research.

**Restorative Model of Well-Being**

Lent (2004) presented two models of subjective well-being (SWB), one focused on how people maintain their sense of well-being under normative life conditions and the other aimed at how they restore emotional equilibrium when confronted with particularly stressful conditions. Both models were intended to be relatively broad in their applicability to different life domains and contexts. The normative model has been generating a good bit of research to this point, with most studies focusing on the academic and social adjustment of college students (Sheu & Lent, 2009) and the job satisfaction of adult workers (Duffy & Lent, 2009), both in the United States and abroad. We focus here on the model of restorative well-being, highlighting its relevance to research on the cancer coping process. Although this model has not yet been tested empirically in its own right, it does integrate a number of theoretical and research streams and thus may serve
as a useful framework for reviewing a portion of the research on psychosocial adaptation to cancer. Because it was designed as a general template for understanding recovery of well-being after emotional setbacks, the restorative model is not cancer-specific. That is, it does not specify how particular medical factors, such as type of cancer or stage of treatment, affect the trajectory of psychological coping with cancer. However, the model has been extended conceptually to cancer coping (Lent, 2007), and Foster and Fenlon (2011) recently adapted it to their research with persons displaying a range of cancer types, sites, and stages. Although we see the model as having particular utility for understanding coping with early stage cancers that have a favorable prognosis (e.g., certain forms of breast cancer)—and for the purposes of this article, only research involving Stage I and II cancer will be reviewed—its range of applicability is ultimately an empirical matter.

The model, shown in Figure 1, attempts to integrate a number of factors that have been linked to coping and emotional recovery, beginning with the awareness of a significant stressor and including the coping strategies, efficacy beliefs, personality factors, and environmental supports that may partly affect psychosocial adjustment. The primary dependent variables in the model include indicators of satisfactory problem coping (e.g., improved satisfaction and role functioning in specific life domains) and recovery of adequate levels of overall life satisfaction. To anchor the model in the context of cancer survivorship, the figure includes cancer-specific examples of each major concept.

In keeping with counseling psychology’s emphasis, the model emphasizes strengths and positive adjustment outcomes. However, it also implicitly acknowledges the possibility for lack of recovery (e.g., continued impairments in well-being), repeated or protracted coping, or the need to establish a new baseline for well-being that does not necessarily equal one’s pre-diagnostic functioning. We also consider a range of adjustment outcomes (e.g., psychological symptoms, changes in role functioning) associated with the model’s variables in our review. It should be noted that, in the context of cancer survivorship, the model views recovery as a relative concept. To the extent that the experience of cancer has disrupted one’s characteristic level of well-being, the focus is on improvement in functioning (e.g., reestablishing at least a satisfactory level of well-being)—living better, as it were—rather than complete problem resolution. We will review each class of variables, below, tying the model to relevant research primarily from the past 10 years. Given space limitations and the size of the literature, our review is necessarily selective, focusing on more recent work that may be linked to the social cognitive model.
Figure 1. A Model of Restorative Well-Being, Showing the Interrelations of Personality, Affective, and Social Cognitive Variables in the Coping Process

Source: Adapted from Lent (2004) by permission.
Problematic Events or Internal States

The restorative model assumes that the process through which people typically maintain their sense of well-being may become destabilized when they are confronted by problematic external events (e.g., health threats) or internal states (e.g., mood states, existential questions). In applying the model of restorative well-being to cancer, the problematic event can be more difficult to define than with more discrete events. Receiving a diagnosis of cancer may be the focal event, but depending on the type and stage of cancer, a cascade of problematic events may occur, resulting in redefinition of the initial event and changing internal states. For many women with early stage breast cancer, for example, diagnosis may be followed quickly by a lumpectomy, which marks the end of treatment and the beginning of recovery. For others, the initial problematic event (diagnosis or symptoms leading to it) may be redefined based on biopsies showing a more advanced cancer. Thus, the trigger event may be better understood as an ongoing process that conveys new information about one’s health and new coping challenges (e.g., treatment implications). Moreover, the process of recovery may be delayed or impeded by significant and often long-lasting side effects and the possibility of unsuccessful treatment and recurrence.

Unfortunately, many studies have examined reactions to diagnosis and recovery using a cross-sectional rather than longitudinal design, used group data that may miss idiographic reactions to problematic events, or included only participants with a good chance of survival (e.g., Hamana-Raz & Solomon, 2006). Despite these limitations, three important themes do emerge in findings of research on the psychosocial aspects of cancer diagnosis with adults. First, there is considerable variability in response to a cancer diagnosis, with many persons never reporting a significant level (e.g., meeting Diagnostic and Statistical Manual of Mental Disorders diagnostic criteria) of distress (e.g., Henselmans et al., 2010). This is especially true for cancers that have a high rate of treatment success, such as breast and prostate cancer. For example, the majority of women receiving treatment for early stage breast cancer do not report clinical levels of distress at diagnosis (Jemal, Siegel, Xu, & Ward, 2010) or post-treatment (e.g., Kissane et al., 2004). Those diagnosed with a cancer with a poorer prognosis (e.g., lung, pancreatic, head, neck), however, tend to report higher levels of distress (Zabora, BrintzenhofeSzoc, Curbow, Hooker, & Piantados, 2001).

A second theme is that diagnosis of cancer at a younger age (e.g., before 45), even when caught in early stages, is associated with enduring negative effects, including significant and ongoing distress (e.g., Costanzo et al., 2009), disruptions in key life roles (having and caring for children, work),

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poorer prognosis, and lack of peer support—perhaps because of the “off-time” nature of the health threat, occurring at a time when one’s peers generally tend to be healthy (Arndt et al., 2004). Third, pre-cancer vulnerabilities (e.g., mood disorders, significant life stressors) are related to higher distress at diagnosis and during treatment (Kissane et al., 2004).

**Coping Appraisal and Strategies**

The emergence of problematic events ushers in a coping process that involves appraisal of the threats to one’s health and utilization of coping strategies (e.g., problem-focused and emotion-focused coping, meaning-making, shifts in life goals and roles) to protect and optimize one’s well-being in the face of health threats.

**Coping appraisal.** When confronted by a diagnosis of cancer, people typically engage in the cognitive process of appraising the nature of the stressor (e.g., threat, actual harm or loss) and whether they have the capabilities or resources to cope with it (e.g., Bowman, Deimling, Smerglia, Sage, & Kahana, 2003; Lazarus & Folkman, 1984). Cognitive appraisal of one’s cancer has been related to anxiety and adjustment in that the higher the perceived threat, the lower the level of well-being and the greater the level of distress (Hamana-Raz & Solomon, 2006). The appraisal process often involves seeking information about treatment options and the likelihood of their success. Next, available resources such as financial, social support, and treatment access may be appraised to assess whether they are available and adequate to meet the threat. Treatments that require frequent medical appointments, pain or discomfort, disfigurement or loss of functions, medications that impair functioning, or traveling great distances may be viewed as exceeding one’s available resources. This may be especially so for persons without significant others willing or able to assist with ongoing treatment. Appraisal of what cancer may mean post-treatment in terms of valued goals (e.g., having a biological child), life roles, self-image, and fundamental assumptions about one’s life may also occur. This type of appraisal is often referred to as meaning-making (Park & Folkman, 1997).

The appraisal that one has control over one’s cancer can be a double-edged sword. For example, baseline perceptions of control in women with Stages I-III of breast cancer were associated with worse psychological and physical functioning in women who experienced a cancer recurrence 5 years after cancer treatment but not for women who remained cancer-free (Tomich & Helgeson, 2006). In one of the few longitudinal studies of the relationship between perceived control and psychological distress, results showed that as
perceived control increased over the year following breast cancer treatment, psychological distress decreased (Barez, Blasco, Fernandez-Castro, & Vilidrach, 2009). It appears that perceived control may be beneficial until it is challenged by ongoing side effects, setbacks, and recurrences that often occur with cancer. It may be helpful for persons facing a diagnosis of cancer to acknowledge that there are limits to personal control and to receive assistance at identifying and managing those aspects of treatment and recovery over which they have more and less control (e.g., selecting a medical team that they trust and establishing a support network versus ruminating on remaining in remission).

Appraisal and reappraisal occur throughout the cancer experience as new information about one’s health emerges. Because some biomedical cancer treatments can be relatively short term but intense (e.g., daily radiation therapy treatments for multiple weeks), during which patients have regular access to trusted medical care, the sudden loss of such structure and support can constitute new problematic events (National Research Council, 2005). Moreover, the need to manage ongoing treatment effects, such as fatigue and physical limitations, may conflict with expectations of the cancer survivor and of significant others that life should return to normal (Jefford et al., 2008). Cancer survivors may grieve over the loss of their pre-cancer life, worry about cancer recurrences, and reappraise their expectations for their new baseline of functioning.

Coping strategies. People implement strategies to cope with appraised stressors. In keeping with stress coping theory, research on cancer has often examined problem-focused coping and emotion-focused coping, and more recently, meaning-making (Park & Folkman, 1997). Problem-focused coping is aimed at managing or resolving the stressor. For cancer survivors, problem-focused coping may begin with seeking a diagnosis, gathering information, seeking second opinions, and making treatment decisions. It may not be surprising that problem-focused coping has been correlated with emotional well-being in early stage cancers, given the often brief time span between starting and ending treatment and the typical success rates in treating such cancers (Matthews & Cook, 2009).

Emotion-focused coping is aimed at managing the internal aspects of the stressor and may include distancing or distracting oneself or positively reappraising a stressor. For cancer survivors, emotion-focused coping may help one to navigate emotional reactions (e.g., depression), functional limitations, and changes in valued life roles. Positively appraising cancer, such as viewing it as an opportunity to learn from life experiences, has been related to more positive perceptions of oneself, of one’s social relationships, and of
one’s life meaning as well as to greater effort in redirecting energy toward new goals when cancer makes previous goals unattainable (Schroevers, Kraaij, & Garnefski, 2011). Other positive appraisal strategies, including reframing cancer as a challenge with specific demands that must be overcome or as having the potential to make oneself stronger, have been positively related to well-being and negatively related to distress (Degner, Hack, O’Neil, & Kristjanson, 2003). In contrast, avoidant forms of coping, such as self-distraction, have been significantly related to negative effects during treatment (Schroevers et al., 2011).

Austenfeld and Stanton (2004) distinguished “emotional approach coping” from the broader construct of emotion-focused coping, viewing the former as an adaptive strategy that involves “acknowledging, understanding, and expressing emotion” (p. 1340). A longitudinal study of breast cancer survivors found that those who reported higher levels of emotional approach coping at the beginning of the study demonstrated enhanced physical health and vigor, and less distress, 3 months later (Stanton et al., 2000). The findings of this study also suggested the importance of being able to process as well as express emotions so as to avoid getting caught in a pattern of rumination. Additional research is needed on potential moderators of the relationship between emotional approach coping and health outcomes, such as personality factors, social receptivity to emotional expression, and the ability to self-regulate emotions (Austenfeld & Stanton, 2004).

Meaning-making is another type of reappraisal coping strategy, which Park (2010) defines as the recovery of meaning or making new meaning when facing highly stressful situations. In her integrative model of meaning-making, Park (2010) explains that people rely on a global meaning-making (or orienting) system that serves as a cognitive framework for understanding their experiences. When facing stressful situations, such as experiencing cancer, people engage in an appraisal process in which they interpret the meaning of that experience compared to their global meaning and feel distressed to the extent that a discrepancy exists between the appraised and global meaning. Meaning-making is the process of reducing the discrepancy between the appraised and global meaning (Park, 2010; Park, Edmondon, Fenster, & Blank, 2008). Meaning-making is hypothesized to result in improved adjustment through several mechanisms, such as acceptance, positive reappraisal, integrating the experience into one’s identity or self-concept, or making positive changes in one’s life (e.g., improved relationships).

Within the context of cancer, widely varied prevalence rates of meaning-making have been reported, ranging from 6% in older survivors (Schroevers, Ranchor, & Sanderman, 2004) to 86% in breast cancer survivors (Lepore &
Kernan, 2009). Cancer survivors’ use of a meaning-making coping style has been linked to improved emotional and social well-being (Boehmer, Luszczynska, & Schwarzer, 2007) and decreased negative affect (Christie, Meyerowitz, Giedzinska-Simons, Gross, & Angus, 2009) but not to enhanced physical functioning (Boehmer et al., 2007; Tomich & Helgeson, 2002). A meaning-making coping intervention has been linked to higher levels of self-esteem and optimism for breast cancer survivors (Lee, Cohen, Edgar, Laizner, & Gagnon, 2006). On the other hand, the process of searching for meaning has been related to worse mental and physical health outcomes for male prostate cancer survivors between the end of treatment and a 3-month follow-up (Roberts, Lepore, & Helgeson, 2006). Similarly, Tomich and Helgeson (2002) found that breast cancer survivors who continued to search for meaning more than 5 years post-diagnosis reported worse mental functioning, less positive affect, and more negative affect. It may be that the ability to achieve a sense of meaning may promote adjustment, while the protracted search for meaning may actually exacerbate distress through processes such as rumination (e.g., Lepore & Kernan, 2009; Park et al., 2008).

Reassessing goals and life roles represent additional coping strategies. Often it is necessary for cancer survivors to establish new life goals and life roles that may be more achievable than their precancer goals (Schroevers et al., 2011). The ability to set these new goals has been linked to positive psychological changes in self-perceptions, interpersonal relationships, and life meaning (Schroevers et al., 2011). For people who survive cancer at an older age, changes in life goals and life roles (such as taking an earlier retirement and becoming a retiree) may not seem substantially “off-time” relative to peers who make similar changes because of other health or family concerns. In contrast, people who survive cancer at a younger age may struggle to a greater degree with the implications for their life goals and roles (Arndt et al., 2004; Costanzo et al., 2009).

Across age groups, Pinquart, Nixdorf-Haenchen, and Silbereisen (2005) found that when compared with healthy controls, recently diagnosed cancer survivors described a greater emphasis on goals related to social (e.g., increasing time spent with family and friends), transcendental (e.g., strengthen spirituality), and health (e.g., become healthier) issues compared to goals related to achievement (e.g., career success or increasing material possessions). Additionally, cancer survivors reported a lower number of life goals, higher perceived difficulty of goals, less effort to achieve their goals, and a greater focus on short-term compared to long-term goals. Furthermore, cancer status and age interacted with goals such that only younger survivors reported a greater emphasis on shorter-term goals, whereas older survivors
did not report this same level of shift in their goal timeframe. Pinquart et al. (2005) suggest that older cancer survivors may have already adjusted their goal setting to account for their age by the time they have been diagnosed with cancer, and therefore their goal setting is less affected than that of younger survivors. Cancer survivors also often report changes in life priorities or values (Harper et al., 2007). The proverbial “brush with mortality” may lead to a reappraisal of purpose in life, redefinitions of valued life goals, and a desire to see benefit in this adverse life experience. This fits Park and Folkman’s (1997) view that external problematic events (in this case, beginning life after cancer) can stimulate the internal meaning-making process.

**Problem-Related Coping Efficacy**

In the restorative well-being model, problem-related coping-efficacy is seen as an important part of the coping process, partly mediating the effect of coping strategies and environmental supports (see Figure 1). Coping efficacy is a form of self-efficacy that refers to people’s beliefs in their ability to negotiate particular stressors or obstacles (Bandura, 1997). These beliefs are assumed to affect how people perceive and react to particular adverse life events and conditions. Favorable perceptions of coping efficacy are likely to help people organize and deploy the coping methods at their disposal, draw effectively on environmental supports, and persist at problem-solving when faced with difficult conditions.

In the domain of cancer survivorship, coping efficacy includes beliefs about one’s ability to deal with myriad challenges posed by the cancer experience, such as coping with treatment-related side effects, seeking and understanding medical information, and obtaining support to manage cancer treatment and recovery (Merluzzi & Sanchez, 1997). Although the literature on cancer-specific coping efficacy is somewhat limited to this point, available data suggest that stronger efficacy is related to positive outcomes such as higher quality of life (QOL) and fewer negative emotions (Heitzmann et al., 2011). Rather than conceptualizing coping efficacy as a general attribute, it may be that different types, stages, and treatment modalities associated with cancer call upon a variety of coping skills and hence efficacy beliefs. Some studies have, therefore, examined perceived ability to cope with the cancer-specific events of a particular type of cancer. Hamana-Raz and Solomon (2006) found that subjective ability to cope with the surgery and chemotherapy associated with melanoma was positively associated with well-being and negatively associated with distress. Wenzel et al. (2002) found that emotional well-being in women being treated for ovarian cancer
was significantly related to confidence in managing the illness-related neurotoxicity of chemotherapy treatment. Manne et al. (2006) examined self-efficacy in women with early stage breast cancer immediately after treatment and 1 year later, finding that certain domains of efficacy (e.g., activity management) increased, while other domains remained stable over time. Such studies highlight the fact that the optimal nature of coping efficacy and the skills with which it is associated may depend on the type of cancer and its treatment.

**Personality and Affective Dispositions**

Personality traits and dispositional variables play important roles in people’s reactions to negative events and traumas. Certain traits may, for example, affect how people appraise life events, perceive their coping efficacy, and manage coping strategies (Lent, 2004). Although personality and affective characteristics have not been predictive of cancer mortality, researchers have found that these variables affect reactions to diagnosis and treatment including managing physical outcomes such as pain perception (Porter et al., 2002). We provide a brief overview of findings on several of the most studied personality factors in cancer survivorship research, including optimism, positive and negative affect, and generalized self-efficacy (GSE).

**Dispositional optimism.** Research has consistently found a relationship between optimism as measured early in treatment and more favorable psychological outcomes. During the first year of treatment for breast cancer, women who reported no significant clinical distress exhibited higher levels of both optimism and mastery compared to women who reported significant levels of distress (Henselmans et al., 2010). Higher optimism during initial treatment has also been shown to predict adjustment as long as 5-13 years after treatment in women with early stage breast cancer (Carver et al., 2005). In contrast, research has found that lower levels of optimism were predictive of higher levels of depressive symptoms several years post-treatment in women with breast cancer (Bardwell et al., 2006). Optimism has also been associated with increases in positive psychosocial and health behaviors (Harper et al., 2007), higher levels of social support and emotional well-being (Matthews & Cook, 2009), and physical and psychological functioning (Helgeson, Snyder, & Seltman, 2004).

Most studies have viewed optimism as a unidimensional construct rather than viewing optimism and pessimism as two partially independent constructs. In a study examining independent contributions of both optimism and pessimism to psychological well-being, higher optimism and lower pessimism
were each associated with more positive affect in newly diagnosed persons with a variety of types of cancer (Pinquart, Frohlich, & Silbereisen, 2007). Over the course of treatment, above median levels of pessimism were also associated with the number of reported side effects from chemotherapy.

Positive and negative affect. Schroevers, Kraaji, and Garnefski (2011) examined the relations of both positive and negative affect to a variety of outcomes in a study of patients presenting with diverse types and stages of cancer. Similar to the findings of the Pinquart et al. (2007) study on optimism and pessimism, positive and negative affect seemed to act as separate constructs. Specifically, positive changes such as positive reappraisal and goal reengagement were related to greater positive affect, whereas negative changes (e.g., avoidant coping) were related to both greater negative affect and less positive affect.

A question that remains unanswered regarding personality and affective characteristics of persons with cancer is whether these differences existed prior to diagnosis. In a longitudinal study of psychosocial reactions to cancer, some members of the noncancer comparison group were eventually diagnosed with cancer, providing the researchers with data on premorbid characteristics (Costanzo et al., 2009). A surprising finding was that those in this group who developed cancer (in contrast to the remainder of the comparison group) reported higher levels of negative affect and lower levels of positive affect both prior to and after cancer diagnosis. This sample was small and the results must be interpreted with caution, but it is interesting to speculate on why these lower levels of positive affect and higher levels of negative affect were found prior to diagnosis. It might be, for example, that this cohort had other premorbid characteristics such as smoking, obesity, or ongoing life stressors that relate both to positive and negative affect and cancer risk.

GSE. Unlike domain-specific self-efficacy, GSE is considered a personality variable. Referring to global confidence in one’s capabilities across life contexts, GSE has been examined in a few cancer studies. In a study of German cancer patients, higher levels of GSE were associated with less depression and fatigue, better health, greater information seeking and use of active coping strategies, and higher levels of emotional, social, and cognitive functioning (Luszczynska, Scholz, & Schwarzer, 2005). Studying breast cancer survivors, Rottman, O’ Dalton, Christensen, Frederiksen, and Johansen (2010) found that higher levels of GSE at baseline were associated with use of an active coping style and emotional well-being 12 months later. GSE was not, however, predictive of social or physical well-being. Schwarzer, Boehmer, Luszczynska, Mohamed, and Knoll (2005) reported that, among male and female cancer patients who had undergone tumor surgery, GSE predicted
later use of four coping strategies (planning, humor, acceptance, and accommodation). The authors argued that GSE may increase flexibility and creativity in identifying coping strategies effective for dealing with cancer.

**Environmental Supports and Resources**

Environmental supports and resources offer key aids to emotional and physical coping. They come in a variety of forms and serve a variety of functions, such as emotional support, cognitive guidance, access to coping models, learning new coping strategies, and social persuasion regarding one’s coping efficacy. Although we categorize psychosocial interventions, such as therapy and peer support groups, as instances of environmental supports and resources, our brief review will focus on naturally occurring support systems. However, we assume that formal interventions may be particularly valuable where informal support systems are deficient or become depleted, which can occur with chronic or highly challenging stressors.

One way to classify types of environmental support is in terms of structural and functional social support. Helgeson (2003) defines functional support as the *quality* of the resources that individuals within the cancer survivor’s social network (including medical personnel) provide; this can include emotional, instrumental, and informational support. In contrast, Helgeson (2003) defines structural support as the *amount* and interconnectedness of the individual’s support network, such as marital or partner status, number of and access to friends, and key life roles that provide support. Given the extensive nature of research on the role of social support during and following cancer treatment, we can highlight only a few particularly relevant studies (also see reviews by Helgeson, 2003; Helgeson & Cohen, 1996).

Much of the research on cancer-related social support focuses on support from family and friends, linking such support to both health-related and psychosocial QOL (Helgeson & Cohen, 1996). Although research suggests that, among the types of support, emotional support is viewed most positively by cancer survivors and has the strongest relationship with positive outcomes, it may depend on who is offering the support and the context of that support (Helgeson & Cohen, 1996). For example, peer group interventions designed to provide informational support may be preferred by cancer survivors over ones that offer emotional support, whereas cancer survivors prefer emotional support over informational support from friends and family (Helgeson & Cohen, 1996). The stress-buffering hypothesis posits that social support reduces one’s vulnerability to distress in the face of stressors (Cohen & Wills, 1985). While social support from family and
friends can be helpful, they can also be a source of distress for persons with cancer (Dakof & Taylor, 1990). In fact, the effect of negative social interactions with significant others may sometimes outweigh the benefits of positive social interactions (Manne, Taylor, Dougherty, & Kemeny, 1997).

An interesting but infrequently explored area of research that may help explain why some cancer survivors report positive social interactions whereas others report negative interactions is social disclosure. These studies examine what and why cancer survivors disclose to others about their treatment and recovery and how others respond to these disclosures. Prostate cancer survivors reported that their primary reasons for disclosing diagnosis, treatment, and recovery information was to seek social support and to share information that they believed others had the right to know (Jackson et al., 2010). Perceived emotional support following these disclosures was related to experiencing positive emotions and to engaging in ongoing discussions of treatment side effects. A study of breast cancer survivors by Figueiredo, Fries, and Ingram (2004) examined the effects of disclosure patterns and unsupportive interactions. Results showed that women most often disclosed to family and friends (vs. mental health workers) and focused most on concerns about how their illness affected family members and their own fears of recurrence. For those who disclosed their concerns, minimizing or distancing responses from others were seen as most unsupportive and were associated with problematic emotional and social functioning and greater role limitations. Women who did not disclosure treatment and recovery concerns to others reported lower social support and well-being. Because disclosure is a dyadic process, future research might examine not only survivors’ disclosures and intentions but also receivers’ perceptions and reactions.

In addition to its stress-buffering effects, it is possible that social support may help persons with cancer to assimilate the meaning of their experience by improving their ability to cognitively process this troubling event. This hypothesis was tested in a study of men with prostate cancer to see if stronger social supports led to enhanced QOL through the mediating role of cognitive processing (Roberts et al., 2006). Baseline data were collected soon after cancer treatment and the men were interviewed 3 months later. Results showed that social support at Time 1 was positively related to psychological functioning at Time 2 and that this relationship was mediated by indicators of cognitive processing. In contrast to searching for meaning, which can lead to intrusive thoughts, the researchers speculated that cognitive processing with a significant other led to finding meaning.
Adjustment Outcomes

The restorative model was framed with counseling and psychoeducational interventions in mind and drew upon the literatures in domain-specific and global well-being. It therefore highlights two types of outcome variables: changes in functioning directly related to the problem condition (i.e., problem resolution, satisfaction in specific affected life domains) and more general improvement in (and where possible, return to baseline levels of) life satisfaction, which may have been diminished by the onset of the problem. It is reasonable to assume that the experience of cancer can affect functioning and satisfaction within multiple life domains (e.g., work, family, social, and other roles may all become disrupted to varying degrees) and that this coping burden may, in turn, impact overall life satisfaction. However, the literature on psychological adaptation to cancer does not align neatly with these two classes of outcome variables (problem resolution and life satisfaction recovery). Rather, the literature includes a diverse array of outcomes reflecting return to key life roles, perceptions of health and wellness, improved affect following treatment for cancer, and QOL. We cover these outcomes under the headings of changes (both positive and negative) in (a) psychological and role functioning and (b) emotional well-being and QOL. The studies reviewed in this section generally examined functioning in the absence of formal psychosocial intervention, thus providing a window on the natural course of psychological reaction and adjustment to cancer.

Changes in psychological and role functioning. Multiple domains and life roles may be affected by cancer diagnosis and treatment. Compared to those without a history of cancer, survivors more often report psychological concerns, such as depression, and functional limitations (e.g., being unable to work; Hewitt et al., 2003). Psychosocial consequences of cancer have been studied over extended time periods to see if the negative effects endure. For example, Harrington, Hansen, Moskowitz, Todd, and Feuerstein (2010) reviewed the literature on evidence of cancer symptom burden following treatment in four common types of cancer (breast, gynecological, prostate, and colorectal). In addition to physical limitations, depression, pain, and fatigue were commonly found across all four types of cancers, and these problems did not fully resolve for most despite the number of years since treatment, with some survivors reporting continued problems up to 10 years post-treatment.

Other studies have examined single types of cancer or focused on particular stages of cancer to better understand the resolution of problematic cancer
effects. Helgeson et al. (2004) studied breast cancer survivors, most of whom were Stage I or II at diagnosis. About 43% of the women reported only modest positive changes in psychological functioning from diagnosis to post-treatment, another 45% showed slow to rapid improvement, and about 12% showed a steady decline. Similar patterns of impact, recovery, or decline have been reported in other studies (Henselmans et al., 2010). Some of the variation in psychological symptoms over time may be due to treatment side effects, cancer recurrences, or premorbid vulnerabilities (e.g., negative affect, mood disorders). Other factors include age, levels of personal resources (optimism, perceived control) and social support (Helgeson et al., 2004), and perceptions of treatment side effects (Traeger et al., 2009).

Some researchers have studied disruptions in valued role functions, such as work life. It has been found, across studies, that an average of 62% of cancer survivors (range 30%-93%) return or continue to work during or after treatment (Spelten, Spranger, & Verbeek, 2002). According to a 2006 survey of American households affected by cancer (The Kaiser Family Foundation, 2006), 4 in 10 households with a family member with cancer reported that the family member worked at the time of diagnosis. Of those, 36% said that cancer affected how well they could do their job, and about 10% were removed from their job or had to change their job as a result of their cancer. Survivors returning to work have reported difficulties with concentrating and managing stress, physical side effects (e.g., fatigue, arm swelling, speech difficulties, bowel and urinary problems), inability to perform at their precancer level, changed relationships with coworkers, and the need for time off for medical appointments (Kennedy, Haslam, Munir, & Pryce, 2007). A growing body of research is showing poorer psychosocial recovery for younger women diagnosed with breast cancer, perhaps because a cancer diagnosis at a younger age may be perceived as a greater survival threat and may interrupt attainment of key life goals (e.g., having a family, developing a career trajectory) and building of social supports that might buffer the effects of cancer on well-being (Shaha & Bauer-Wu, 2009).

**Changes in emotional well-being and QOL.** Outcomes denoting recovery in well-being vary considerably in the cancer literature and include overall QOL, return to baseline levels of distress, and maintaining or improving levels of SWB. A study comparing breast cancer survivors at 5 years post-treatment to age-matched controls found that there were no overall differences on psychosocial QOL (Helgeson & Tomich, 2005). However, participants who had experienced breast cancer recurrence reported poorer QOL than did those who had remained in remission. It may be, therefore, that both initial prognosis and changes in health status over time affect the process of assimilating
the cancer experience. It may also be that personal characteristics such as optimism contribute to QOL at post-treatment. In a study of breast cancer survivors, dispositional optimism was associated both at diagnosis and the post-treatment period with better QOL and fewer symptoms (Schou, Ekeberg, Sandvik, Hjermstad, & Ruland, 2005). Other research has linked optimism and partner support to better psychosocial QOL among early stage breast cancer survivors 5-13 years after treatment (Carver, Smith, Petronis, & Antoni, 2006).

Wenzel et al. (2002) studied QOL at 5 years post-treatment in early stage ovarian cancer survivors. As a group, these women reported QOL and psychological well-being similar to same-aged, noncancer cohorts despite reporting concerns about follow-up cancer checks and fear of recurrence. However, a sizable minority (20%) of these cancer survivors did report enduring clinically significant cancer-related problems such as psychological distress, declining health status, and treatment side effects. Despite showing NED, this subset of women continued to report psychosocial and physical concerns (e.g., pain, fatigue) that were associated with poorer QOL.

In a study that compared QOL of breast cancer survivors 1 year after diagnosis to general population norms, global health QOL scores were similar for the cancer survivors and the norm group, but major deficits were found for psychosocial aspects of QOL (Arndt et al., 2004). When these data were analyzed by age of survivor, deficits in psychosocial QOL were found only for younger women. A number of other studies have found that younger cancer survivors are less likely to return to baseline levels of QOL (e.g., Costanzo et al., 2009; Hewitt et al., 2003). A study sampling men with prostate cancer (which is similar to breast cancer in recovery rates but, unlike breast cancer, does not include significant numbers of younger survivors) found that most of the men quickly returned to relatively high levels of QOL (Roberts et al., 2006).

Implications for Future Research

Our selective review of the literature, using the social cognitive model as our organizing framework, suggests several implications for future research. One limitation of the literature we reviewed is that data were often analyzed at the group level, which may obscure within-group variations in emotional recovery and role functioning (Helgeson et al., 2004; Henselmans et al., 2010; Wenzel et al., 2002). For example, group studies of breast cancer survivors offer optimistic conclusions about survivors’ emotional resilience but may overlook a significant minority who become distressed and remain so.
addition to differential patterns of recovery, more research is needed to determine the role of premorbid characteristics, positive supports, coping efficacy and strategies, treatment side effects, and cancer recurrences in emotional recovery.

Another need involves efforts to better define the goal of emotional recovery. Is it, for example, best conceptualized as a return to pre-diagnosis levels of domain and life satisfaction or role functioning? Or does it involve the creation of a new baseline or adjusted standards for normality postdiagnosis? The transition to recovery is another important topic in terms of how rapidly this occurs and what factors facilitate or hinder this transition. There is also a need for more research on conceptualizing emotional recovery in persons with cancers with a poorer biomedical prognosis.

More research is needed that examines functioning and well-being at multiple time points (e.g., using online monitoring of affect). This is especially important in studies that examine the effects of psychosocial interventions (Osborn, Demoncada, & Feuerstein 2006).

It would be useful for longitudinal and experimental intervention studies to be guided by theory, and we believe the social cognitive model we described offers one viable framework. The model would suggest a focus on particular cognitive, affective, behavioral, and social pathways through which emotional recovery may occur. For example, does reengagement (to the extent possible) in valued life activities or resetting of particular life goals promote recovery in SWB? Can access to coping models (e.g., via online or face-to-face support groups) bolster coping efficacy and expand one’s repertoire of coping strategies? In addition, although we examined each set of social cognitive elements individually in our review, there is a need for research examining how the full set of elements function together in the recovery process. For example, does cancer-specific coping efficacy partly mediate the effects of coping strategies and social support on adjustment outcomes?

We believe the model also offers ideas for designing, structuring, and testing specific model elements. One example is the goal-setting process given that progress toward valued life goals may be compromised by diagnosis and treatment. What factors disrupt the goal setting process, and how do survivors revive or revise previous goals, set new goals, identify markers of progress, access needed resources, and respond to goal-related successes and disappointments?

Second, research might focus on how survivors reengage with valued life activities that may have been curtailed by cancer treatment. Valued activity involvement can offer multiple benefits, such as reestablishing a sense of life structure and purpose, promoting goal pursuit and domain satisfaction, and
limiting rumination and social isolation (Cantor & Sanderson, 1999; Lent, 2004). Engaging in such activities as interacting with friends may, among other things, offer opportunities for receiving and giving social support, and social support has been linked to the psychological health of cancer survivors (Helgeson & Cohen, 1996).

Third, survivors often report the need for specific support with managing the impact of cancer on activities of daily life—a need that may be complicated by low self-efficacy at requesting or accessing social support (Foster & Fenlon, 2011). Thus, research might focus on bolstering self-efficacy and skills at marshalling needed social supports as well as in performing tasks that may facilitate adjustment. Such research could draw upon the four sources of efficacy information (Bandura, 1997) as a general structure for raising self-efficacy and skills in relation to particular coping tasks and strategies (e.g., dealing with work reentry, disclosing aspects of one’s recovery experience to significant others in a manner that facilitates the receipt of positive social support). A number of additional research directions, both for psychosocial intervention and greater understanding of emotional recovery in the aftermath of cancer diagnosis and treatment, may be derived from the restorative well-being model (Lent, 2004, 2007).

**Conclusion**

We believe that counseling psychologists can play valuable roles, both as researchers and practitioners, in addressing the psychosocial needs of cancer survivors and of those in their support systems, whose own well-being may well have been affected by the cancer experience. Psychosocial interventions may not optimally affect physical functioning or survival rates in the aftermath of cancer (Chow, Tsao, & Harth, 2004; Osborn et al., 2006). However, they may have great potential to promote recovery of emotional well-being and other aspects of adjustment, thereby enabling survivors to derive as much pleasure and productivity as possible from life, given the uncertainties and disruptions imposed by the cancer experience. The social cognitive model of restorative well-being we have presented may be useful as a framework for organizing part of the literature on the psychosocial adjustment to cancer, as a source of hypotheses for future research on coping with cancer, and as a template for intervention design.

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