CHAPTER 12

Psychosocial Oncology

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CANCER: A BASIC PRIMER 271
BEHAVIORAL RISK FACTORS 274
PSYCHOSOCIAL EFFECTS OF CANCER 275
PSYCHOSOCIAL INTERVENTIONS FOR CANCER PATIENTS 277

Like most wars, the war on cancer leaves casualties, scars, and lives in need of healing in its wake. It has only been during the past two decades that health and mental health professionals have focused on the psychosocial needs of cancer patients and their families (Nezu, Greenberg, & Nezu, 2010). An increasing awareness of the significant emotional, interpersonal, family, vocational, and functional problems such individuals experience, and how these problems potentially affect their overall health, quality of life, and even health outcome, has led to the creation of the field of psychosocial oncology or psycho-oncology. According to Holland (1990), the two major areas of interest characterizing this cancer subspecialty are “(a) the impact of cancer on the psychological function of the patient, the patient’s family, and staff; and (b) the role that psychological and behavioral variables may have in cancer risk and survival” (p. 11). In addition, an important outgrowth of these areas of scientific inquiry involves developing and evaluating the efficacy of psychosocial interventions geared to improve a cancer patient’s quality of life (Baum & Andersen, 2001; Feuerstein, 2007). This chapter provides an overview of this field, beginning with a brief description of cancer itself.

CANCER: A BASIC PRIMER

In this section, we provide a brief overview of important concepts related to oncology. This includes a description of the different types of cancers, cancer statistics, stages of cancer, and the major forms of cancer treatment.

What Is Cancer?

The first description of cancer began with the earliest recordings of history during ancient Egyptian times (American Cancer Society, 2010). Later, the resemblance of fingerlike spreading projections of tumors to a crab probably led Hippocrates, the Greek physician, to describe these tumors using the Greek words carcinos and carcinoma, which was later translated to the word cancer.

Although cancer is often thought of as a single disease, it is actually a generic term encompassing a group of more than 100 diseases in which the damaged DNA of a cell causes it to grow out of control. The various types of cancer cells can be classified into five broad categories: carcinoma (the most common type, a cancerous tumor that begins in the skin or tissues that line or cover internal organs); sarcoma (a cancerous tumor that originates in certain tissues, such as bone or muscle); leukemia (cancer in the blood or blood-forming organs); lymphoma and myeloma (cancers that begin in the cells of the immune system, such as white blood cells and plasma cells); and central nervous system cancers (those that begin in the tissues of the brain and spinal cord).

The common feature of all types of cancer is the uncontrollable growth and accumulation of abnormal cells. Normal cells behave according to a genetically predetermined set of rules unique to the particular cell type (e.g., skin, blood, brain). These normal cells divide, mature, die, and are replaced systematically. Cancer cell growth differs from normal cell growth. Due to damaged DNA, instead of dying, cancer cells continue to grow and form abnormal
cells that grow more rapidly, in a disorderly fashion, and do not mature correctly. These cells can grow into malignant tumors that replace normal surrounding tissue and spread throughout the body. Whether due to hereditary or environmental causes, cancer involves a malfunction of genes that control cell growth and division. The uncontrolled spread of abnormal cells, or metastasis, can affect the functioning of other organs, potentially leading to death.

Cancer Statistics

More than 1.5 million new cases of cancer were expected to be diagnosed in the United States in 2010. This estimate excludes basal and squamous cell skin cancers (more than 2 million people were treated for these in 2006) and carcinoma in situ (noninvasive cancer) of any site except the urinary bladder. Cancer is the second-most-common cause of death in the United States, surpassed only by heart disease, and the leading cause of death worldwide (Ferlay et al., 2010). In the United States, cancer accounts for nearly one in every four deaths, and in 2010, more than 560,000 Americans were expected to die of cancer (American Cancer Society, 2010). Slightly less than half of all men and one third of all women in the United States will develop cancer at some point in their lives, with about 78% of all cancers diagnosed in persons age 55 or older.

Gender

According to the estimated new cancer cases and deaths for 2010, incidence and mortality rates for cancer of all sites are slightly higher for men than women (American Cancer Society, 2010). Recent data indicate U.S. women have a slightly higher prevalence rate for a combination of all cancer sites (Edwards et al., 2010). This suggests that more women are living with a history of cancer than men, even though women are slightly less likely to be diagnosed with cancer, which is probably due to the higher mortality rates for males.

According to the American Cancer Society (2010), about 50% of males are at a lifetime risk for developing invasive cancer of any type, and about one in four men are at risk of dying from cancer. The most common newly diagnosed cases of cancer in men are expected to be prostate cancer and lung/bronchus. Lung/bronchus and prostate cancer types also involve the most life-threatening cancer diseases for males.

For females, about 33% are at risk of developing an invasive cancer of any type during their lifetime, with one in five being at risk of dying from cancer of any type.

The highest rate of new cases for 2010 was estimated to be for breast cancer and lung/bronchus cancer. Similarly, lung/bronchus and breast cancers are associated with the highest mortality rates for cancer in women.

Race/Ethnicity

The incidence of cancer is variable across not only cancer types but also races/ethnicities (Edwards et al., 2010). When combining all cancer sites, cancer incidence is highest among Black men and Blacks in general. Non-Hispanic and White women represent the highest overall incidence rates among women. Native American and Alaskan natives have the lowest overall incidence rates of cancer. Mortality rates remain the highest for Black men and women and the lowest for Asian Americans and Pacific Islanders.

Eliminating disparities in cancer burden among various minority groups (e.g., based on race/ethnicity, socioeconomic status, sex, sexual orientation, and residence) is a major prospective goal set by the American Cancer Society for the year 2015. Although the causes of such health disparities are multiple and complex, one contributing factor is social barriers to high-quality cancer prevention, early detection, and treatment services (American Cancer Society, 2010).

Improvement in Survival Rates

Either cancer-free or still undergoing treatment, approximately 11.4 million Americans with a history of cancer were alive in 2006. The 5-year relative survival rate for all cancers has increased, up from 50% for those diagnosed in 1975 to 1977 to 68% for those diagnosed between 1999 and 2005 (American Cancer Society, 2010). Mortality rates for all cancers combined have also decreased in the past two decades, with slightly larger decreases for men than women (Edwards et al., 2010). Earlier diagnoses and better treatments have contributed to such increased survival rates, although these rates vary widely by cancer types and stage at diagnosis.

Overall cancer incidence rates for all racial/ethnic groups and both sexes combined has decreased by 0.7% per year during 1999 to 2006 (Edwards et al., 2010). Trends during the most recent periods reveal decreased incidence rates in the two most common cancers (prostate and lung/bronchus) in men and the most common cancer in women (breast) but an increase in the second-most-common cancer (lung) among women.

Cancer Stages

Staging is the process of defining the extent or seriousness of a given cancer type, as well as a means to denote the
degree of spread of the cancer cells from the site of origin to other parts of the body. To plan appropriate treatment and estimate prognosis, the extent or severity of the cancer is commonly assessed using a staging method based on primary tumor size, location, and metastasis. The TNM staging model refers to the extent of the primary tumor (T), the degree to which lymph nodes have been affected (N), and the presence of distant metastasis, or spread to other organs (M). Another consideration for some cancer types may be the cell type or tumor grade (i.e., how closely the cells resemble normal cells).

Once this has been determined, cancers are classified into five stages ranging from the early stage, 0, when cancer is in situ (i.e., abnormal cells are not beyond the layer at which they developed) to the late stage, IV (i.e., cancer has spread from the primary site to distant organs or lymph nodes). In addition, some cancer types include stages that are subdivided (e.g., IIA, IIB). Generally, the higher the stage, the more advanced the cancer. Practically, a cancer in the early stages is likely to be small and confined to a primary site. When cancer is in an advanced stage, it is likely to be large and metastasized to lymph nodes or other structures.

Cancer Treatment

Medical treatment for cancer varies according to site and severity and includes such general types as surgery, radiation, chemotherapy, biological therapy, bone marrow transplant, and other specific variations of these interventions. The treatments may be used as primary treatments or an adjuvant treatment, which is delivered after the primary treatment has been implemented. For example, a woman may have surgery to remove a tumor of the breast (primary treatment), followed by chemotherapy to destroy the remaining cancer cells (adjuvant therapy). Neoadjuvant therapy involves treatment that is given prior to the primary treatment to control known or possible sites of metastasis. Prophylactic treatment is utilized when there is a site that is at high risk for cancer development.

Surgery

Surgery is the oldest, most frequent treatment for cancer and an important part of the staging process. This method is used to remove a primary tumor, surrounding tissue, and affected lymph nodes. Surgery may also be performed to remove tumors that are metastatic, recurrent, or residual. Surgery may also be prophylactic, as in cases where women with breast cancer have their other breast removed to reduce the risk of cancer recurrence.

Chemotherapy

This type of cancer treatment uses drugs to stop or slow the growth of cancer cells to cure, control, or ease cancer symptoms. Chemotherapy, unfortunately, can also harm healthy cells that grow quickly, such as those that cause hair to grow, although these effects may improve or disappear when treatment is discontinued. Chemotherapy can be delivered through injection, intra-arterially, intraperitoneally, intravenously, topically, or orally. Although it can be used as a singular treatment, it is often an adjuvant treatment to surgery or radiation therapy. Common side effects of chemotherapy include fatigue, nausea, vomiting, and sexual and appetite changes.

Radiation

This cancer treatment, also called radiotherapy, destroys cancer cells and prevents them from spreading. Radiation is given in high doses to cure cancer, cease, or slow the proliferation of cancer. Similar to chemotherapy, radiation can also harm nearby healthy cells. Although normal cells may be repaired, the effects of radiation are accumulative. Patients may experience fatigue, hair loss, anemia, oral changes (e.g., dry mouth), nausea and vomiting, and sexual changes, depending on the location of the treatment. Radiation is commonly used in addition to other treatments. For example, it may be given prior to surgery to shrink the size of the tumor (i.e., neoadjuvant therapy) or after surgery to diminish the remaining cancer cells. It can also be used in combination with chemotherapy to enhance the effects of the treatment or as a palliative method to reduce symptoms and prevent problems such as blindness or loss of bowel and bladder control. Newer radiation technology (i.e., proton therapy) is being developed to better target cancer cells, thereby potentially improving treatment and decreasing the long-term adverse effects of radiation therapy.

Biological Therapy

This treatment modality, also called immunotherapy, biotherapy, or biological response modifier (BRM) therapy, uses the body’s immune system to stop, control, or suppress cancer growth. Biological therapies involve interferons, interleukins, colony-stimulating factors, monoclonal antibodies, vaccine gene therapy, and nonspecific immunomodulating agents to defend the body against attacks from cancer cells. Side effects include rashes, swelling, and flulike symptoms (e.g., fever, nausea, chills, vomiting, fatigue, bone pain).

Bone Marrow Transplantation

Hematopoietic or blood-forming stem cells, found in bone marrow, bloodstream, or umbilical cord blood, are
immature cells that can transform into blood cells. Bone marrow transplantation (BMT) and peripheral blood-stream stem cell transplantation (PBSCT) restore stem cells that were destroyed as a result of chemotherapy and/or radiation therapy. After high-dose drug or radiation treatment, a cancer patient receives stem cells that travel to the bone marrow and produce the necessary new blood cells that carry oxygen, fight infection, and prevent bleeding. BMT and PBSCT are most frequently used to treat leukemia and lymphoma and are most effective when in remission.

**BEHAVIORAL RISK FACTORS**

Only about 5 to 10% of all cancers are clearly hereditary. The remaining cancers are caused by mutations resulting from various internal (e.g., hormones) or external factors (e.g., sunlight). Behavioral risk factors refer to those lifestyle activities that increase the likelihood that a person will develop cancer. Such factors include tobacco, alcohol, diet, and exposure to sun. Additional psychosocial variables that have been investigated regarding their causal link to cancer include socioeconomic status and personality.

**Tobacco**

According to the American Cancer Society (2010), tobacco use was estimated to cause about 171,000 U.S. cancer deaths in 2010. Tobacco accounts for nearly 5 million deaths worldwide per year (Ezzati, Lopez, Rodgers, Vander Hoorn, & Murray, 2002). Smoking accounts for approximately 30% of total cancer deaths in the developed world and 90% of all lung cancer deaths (Stein & Colditz, 2004). In addition, smokers have an increased risk for developing at least 15 differing types of cancer, including lung, oral cavity, pharynx, larynx, esophageal, pancreatic, head and neck, stomach, and renal cancer (U.S. Department of Health and Human Services, 2004). On the positive side, ceasing tobacco use has been found to be beneficial with regard to cancer risk. For example, after 10 years of nonsmoking, the risk for lung cancer mortality decreases between 30 and 50%. Moreover, a 50% reduction in cancer risk of the esophagus and oral cavity has been found after only 5 years of smoking cessation (U.S. Department of Health and Human Services, 2004).

**Alcohol**

Although the specific biological underpinnings linking alcohol and increased risk for cancer are unclear at present (Boffetta & Hashibe, 2006), studies have shown a definite association. For example, a meta-analysis of 235 studies that included over 117,000 cases suggested a strong trend in increased risk for cancers of the oral cavity and pharynx, esophagus, and larynx (Bagnardi, Blangiardo, La Vecchia, & Corrao, 2001). Less strong direct relations were found regarding cancers of the stomach, colon and rectum, liver, breast, and ovary.

**Diet and Obesity**

A link between poor diet, excess body weight, and cancer has been demonstrated in a wide variety of investigations (Renehan, Robert, & Dive, 2008). For example, estimates suggest that approximately one third of the cancer deaths that occur in the United States each year are a function of poor nutrition, limited physical activity, and obesity (American Cancer Society, 2010). Increased cancer risk has also been linked to various dietary deficiencies, such as low intake of fruits and vegetables, fiber, and micronutrients (e.g., riboflavin, iron). In addition, excessive pickling, smoking, and salting of foods has been associated with increased cancer risk. In general, research suggests that being obese is responsible for approximately 14% of cancer deaths among men and 20% of cancer deaths in women (Stein & Colditz, 2004). Lack of physical activity has also been found to increase the risk of certain cancers, such as colon, breast, and endometrial cancers (International Agency for Research on Cancer, 2002). On the positive side, losing weight appears to reduce the risk of breast cancer and to reduce cancer mortality (American Cancer Society, 2010).

**Sun Exposure**

Ultraviolet radiation from the sun, in particular UVB (radiation lying between 280 and 320 nanometers of the solar spectrum), has been linked to increased risk for skin cancer (melanomas and nonmelanomas). In addition to being carcinogenic, UVB is an immunosuppressor, potentially leading to DNA damage. The incidence of melanoma has increased more rapidly than any other type of cancer in the United States (Stein & Colditz, 2004). UVA radiation, which is between 320 and 400 nanometers of the solar spectrum, because it was thought to be noncarcinogenic, is the basis for commercial tanning salon sun lamps. However, research continues to demonstrate that indoor tanning is associated with significant risks, strongly underscoring the role of artificial UV radiation in cutaneous carcinogenesis (Levine, Soric, Spencer, & Siegel, 2005).
Socioeconomic Status

Research that cuts across many varying populations around the world provides the following conclusions: (a) depending on the specific cancer site, in general, a direct and inverse relationship exists between socioeconomic status (SES) and cancer incidence; and (b) across cancer sites, the relationship between SES and cancer survival is positive, that is, as SES decreases, so does the rate of cancer survival (Ward et al., 2004). Socioeconomic factors influence tobacco use, poor nutrition, physical inactivity, and obesity, thus increasing the risk of cancer (Institute of Medicine, 2003).

Personality

Personality characteristics have been suggested as a potential risk factor for developing cancer. However, research generally suggests a lack of convincing evidence in support of this hypothesis. For example, in a large-scale study that initially included over 30,000 residents in Japan, no associations between any scale on the Eysenck Personality Questionnaire–Revised and the risk of cancer were identified (Nakaya et al., 2003). Such a lack of associations were also found in a Finnish sample (Lillberg, Verkasalo, Kaprio, Helenius, & Koskenvuo, 2002) and a Danish sample (Bleiker, Hendriks, Otten, Verbeek, & van der Ploeg, 2008).

PSYCHOSOCIAL EFFECTS OF CANCER

Considerable medical progress has been made in treating this set of diseases. Many forms are curable, and there is a sustained decline in the overall death rate from cancer when one focuses on the impact on the total population. For example, the 5-year relative survival rate for all cancers diagnosed between 1999 and 2005 was 68% as compared to 50% spanning the years 1975 to 1977 (American Cancer Society, 2010). Because of improvements in medical science, more people are living with cancer than ever before. However, although the extensive medical needs of such patients may be well attended to, psychosocial and emotional needs are often overlooked and not adequately met (Feuerstein, 2007; Nezu, Lombardo, & Nezu, 2006). Almost every aspect of a person’s life can be affected, as cancer engenders many stressors and can lead to a significantly compromised quality of life. Even for people who historically have coped well with major negative life events, cancer and its treatment greatly increase the stressful nature of even routine daily tasks (Nezu & Nezu, 2007). Moreover, not only is psychological distress in and of itself a worthy target to address in treatment but also research has demonstrated that such distress is associated with higher cancer incidence, poorer survival, and higher cancer mortality (Chida, Hamer, Wardle, & Steptoe, 2008). This section focuses on the various psychosocial consequences of having cancer.

Depression

Depression is a common experience among cancer patients. However, the reported prevalence varies considerably from study to study (e.g., major depressive disorder ranges from 3 to 38%; Massie, Lloyd-Williams, Irving, & Miller, 2011). It is likely that this large variability is a function of the lack of standardization in measurement and diagnostic criteria, suggesting the need for improved methodological rigor to more accurately determine depression prevalence rates.

In terms of cancer type, Christensen et al. (2009) recently found a 13.7% prevalence of major depression 12 to 16 weeks after surgery among a sample of 3,321 Danish cancer patients diagnosed with early-stage breast cancer. Higher incidence of depression was found for younger (17.9% for 18- to 35-year-old) versus older (11.2% for 60- to 69-year-old) women. Among women with ovarian cancer, Arden-Close, Gidron, and Moss-Morris (2008) identified a strong relationship between higher levels of depression and younger age, more advanced disease, higher levels of physical symptoms, and shorter time since diagnosis. Among patients with head and neck cancer, a review of 52 studies found that depression rates ranged from 13 to 40% at the time of diagnosis, 25 to 52% during medical treatment, and 9 to 27% 3 years postdiagnosis (Haisfield-Wolfe, McGuire, Soeken, Geiger-Brown, & De Forge, 2009).

Factors associated with greater prevalence of depression are a higher level of physical disability, advanced disease stage, and the presence of pain (Williamson & Schulz, 1995). Also, higher rates of depression have been associated with the side effects of medications and treatment for cancer. Chemotherapy and oncological surgical procedures are a source of possible iatrogenically induced depression in cancer patients because of the negative side effects that may include body image disturbances and physical symptoms (Newport & Nemeroff, 1998).

Numerous studies have also investigated various psychosocial risk factors for developing depression among cancer patients. Some of the risks identified are premorbid coping skills, social isolation, first-degree relatives with a history of cancer and depression, a personal history of depression, a personal history of alcohol or other
substance abuse, and socioeconomic pressures (Newport & Nemeroff, 1998).

The consequences of being depressed in addition to the diagnosis of cancer can be severe. For example, Watson, Haviland, Greer, Davidson, and Bliss (1999) found that depression level was significantly related to increased mortality at a 5-year follow-up among a cohort of breast cancer survivors. A similar association was identified among patients with lung cancer (Buccheri, 1998) and patients undergoing stem cell transplantation (Loberiza et al., 2002).

Suicide

Suicidal ideation and the act of suicide are higher among cancer patients than in the general population and other medically ill cohorts (Rockett, Wang, Lian, & Stack, 2007). For example, cancer patients are approximately twice as likely to commit suicide than the general population (Levi, Bulliard, & La Vecchia, 1990). Further, cancer was the sole physical illness that was found to be significantly associated with death by suicide in a recent review of U.S. mortality rates (Rockett et al., 2007). Risk factors for increased suicidal ideation and behavior among cancer patients include feelings of being a burden to others, depression and hopelessness, pain, lack of social support, existential issues, and fear of the future (Breitbart, Pessin, & Kolva, 2011).

Delirium

Delirium is a common psychiatric problem among cancer patients because of the direct effects of cancer on the central nervous system (CNS) and the indirect CNS complications of the disease and medical treatment (Agar & Lawlor, 2008). Its prevalence is particularly high among terminal cancer patients but frequently goes undetected (Fang et al., 2008). Symptoms are agitation, impaired cognitive function, altered attention span, and a fluctuating level of consciousness. Ljubisavljevic and Kelly (2003) found the following factors to be significant predictors of delirium among a sample of individuals admitted to an inpatient oncology unit: advanced age, cognitive impairment, low albumin levels, bone metastases, and the presence of a hematological malignancy.

Body Image Problems

Body image is one of the most profound psychological consequences from cancer treatments affecting patients with a variety of disease sites. The scars and physical disfigurement serve as reminders of the painful experience of cancer and its treatment. The stress and depression that may be a result of body image concerns can further affect other areas of the patient’s and family’s life, such as sexual intimacy, psychological disorders, and self-esteem.

In women who have had breast surgery, concerns range from distress over scars to feelings of decreased sexual attractiveness and restrictions of use of certain items of clothing. In a study with women who had breast-conserving surgery, 25% had serious body image problems (Sneeuw et al., 1992). Among a group of 546 women age 22 to 50 who underwent breast cancer treatment, over half reported experiencing two or more body image problems some of the time or at least one problem much of the time (Fobair et al., 2006). Of this cohort, for those women who were sexually active, greater body image problems were found to be related to having a mastectomy and possible reconstruction, loss of hair due to chemotherapy, concerns about gaining weight, poorer mental health, lower self-esteem, and the partner’s problems in understanding a woman’s emotions.

Sexual Functioning Difficulties

Estimates of sexual functioning problems vary depending on the type of cancer, but they appear to be common across cancer sites. For breast cancer survivors, the percentage of women who report sexual difficulties range from 50 to 56% (Fobair & Spiegel, 2009).

In a study of cancer patients undergoing a BMT, 47% were found to have a global sexual dysfunction, and 60% had abnormalities of at least one parameter of sexual dysfunction (Marks, Crilley, Nezu, & Nezu, 1996). Common sexual functioning problems among cancer patients include loss of sexual desire in both men and women, erectile dysfunction in men, and dyspareunia (painful intercourse) in women. Studies suggest that sexual dysfunctions continue years after treatment (Fobair et al., 2006), indicating a large impact on a patient’s quality of life (Marks, Friedman, Del-Carpini, Nezu, & Nezu, 1997).

Physical factors from the cancer treatment itself can contribute greatly to the patient’s sexual dysfunctions. Chemotherapy, radiation, surgery, opiate and pain medications, antidepressants, and antipsychotic medications can cause sexual dysfunctions, as well as infertility, in patients. For example, in men receiving prostatectomies, 85 to 90% experience erectile impotence (von Eschenbach, 1986). Loss of sexual desire may be a result of fatigue, pain, or weakness secondary to the cancer treatment; depression;
body image concerns; and feelings of guilt or misbelief about the development and spread of cancer (Schover, 1997).

**PSYCHOSOCIAL INTERVENTIONS FOR CANCER PATIENTS**

“Health is determined not just by biological processes but by people’s emotions, behaviors, and social relationships” (Institute of Medicine, 2008, p. xi). For over 30 years, researchers have been interested in examining the psychological and social issues related to cancer, such as those involved in prevention, diagnosis, treatment, and survivorship (Holland & Weiss, 2010). Researchers have aimed to identify the needs of cancer patients and their families, as well as the impact of psychosocial factors on disease onset and progression, an individual’s functioning, and the ability to preserve quality of life. In addition, psychosocial interventions have been developed to address these types of concerns. Because cancer is not a single disease but rather a collection of over 100 types, identifying effective interventions for cancer is particularly challenging compared to other kinds of chronic illness. Further complicating research, the disease varies not only by site but also by stage (e.g., early, advanced). Levels of distress, varying by type and stage of cancer and by individual, may stem from various sources of stress, including those that existed prior to a cancer diagnosis, the cancer diagnosis itself, unpleasant symptoms of cancer, quality of life, concerns regarding a disruption of life plans, disease recurrence and progression, and end-of-life issues (Institute of Medicine, 2008). The goal of psychosocial interventions is to help cancer patients and their families optimize health care and manage the psychological, behavioral, and social facets of cancer and to promote improved health.

Unfortunately, the multiple complexities involved in conducting research with cancer populations have contributed to inconsistent reports about the overall effectiveness of psychosocial interventions. Such contradictory findings, in part, have led some researchers to believe that psychological interventions targeting distress in cancer patients are ineffective, as well as not accepted by patients (Coyne & Lepore, 2006; Coyne, Lepore, & Palmer, 2006). For example, the *Annals of Behavioral Medicine* published a series of arguments and rebuttals representing this debate. Coyne and colleagues contended that psychosocial interventions were ineffective and unaccepted by patients, pointing to confirmatory bias and methodological flaws of past studies. In defense of psychosocial interventions, the opposing researchers (Andrykowski & Manne, 2006; Manne & Andrykowski, 2006) pointed to various qualitative and quantitative reviews that found a sufficient “preponderance of evidence,” citing in particular five randomized controlled trials (RCTs) that demonstrated positive and significant results. Whereas Coyne and Lepore recognized that an RCT by Nezu, Nezu, Felgoise, McClure, and Houts (2003) (described later in the section on problem-solving therapy approaches) was, in fact, one such methodologically sound study that did support the efficacy of a particular psychosocial intervention, they considered this to be a rare occurrence and labeled it a “black swan.”

Since this debate, additional RCTs have been published that provide evidence for the effectiveness of psychosocial interventions. Several reviews and meta-analyses have examined overall effectiveness but continue to report varying effect sizes. Although researchers have improved the methodology of their studies to comply with CONSORT guidelines, criticism about effectiveness remains (Coyne, Thombs, & Hagedoorn, 2009). In recent years, numerous reviews and meta-analyses have been published, only some of which are cited in this section. Many researchers have recognized the difficulty in proclaiming an overall effectiveness of psychosocial interventions and instead have discussed effectiveness in terms of specific intervention types and applicability to specific cancer type. A comprehensive review of psychosocial intervention outcome literature in the field of psycho-oncology is beyond the scope of this chapter. In this section, a brief overview of the major types of psychosocial interventions studied in the cancer population is however, provided, whereby the reader is directed to various review articles and meta-analyses for further information.

**Psychoeducational Interventions**

Psychoeducational interventions aim to reduce uncertainty, feelings of inadequacy, confusion, helplessness, and loss of control by supplying information about the disease process, coping with the disease, and resources available to cancer patients (Edwards, Hulbert-Williams, & Neal, 2008). Psychoeducational components have also been used in combination with other psychosocial interventions (e.g., psychotherapy) and have been effective in reducing distress when integrated with such interventions.

A recent review of the past 25 years of reports regarding psychosocial interventions for cancer patients found that educational and informational interventions represented one fifth of past research (Moyer, Sohl, Knapp-Oliver, &
Schneider, 2009). In their review, Jacobsen and Jim (2008) found psychoeducational interventions to be effective in preventing or relieving depression and anxiety in newly diagnosed patients and patients undergoing surgery or chemotherapy. According to these researchers, the benefits of psychoeducational interventions were probably produced by a reduction in fear through preparation for treatment and information about ways to cope with cancer stress and treatment.

An example of a psychoeducational intervention is provided by McQuellon and colleagues (1998), who evaluated a multicomponent program to reduce anxiety, depression, and overall distress symptoms in cancer patients. The study sample was 150 cancer patients who were randomly assigned to either the intervention or usual care conditions. The very brief intervention, lasting only 15 to 20 minutes, was a clinic tour, a description of clinic procedures and general information about clinic operations, and a question-and-answer session with an oncology counselor. Outcomes were assessed at the initial clinic visit and at a follow-up visit 1 week later. Patients who received the brief intervention reported significantly less anxiety, less depressive symptomatology, and significantly greater satisfaction with their care.

Cognitive-Behavioral Interventions

Cognitive-behavior therapy (CBT) interventions for cancer patients typically involve relaxation training, coping skills training, and cognitive restructuring. These treatment protocols focus on recognizing and altering maladaptive thoughts and behaviors to ameliorate distress and promote well-being. In their review of psychosocial interventions over the past 25 years, Moyer and colleagues (2009) found that one third of interventions utilized a primarily cognitive, behavioral, or cognitive-behavioral modality. The following describes various CBT approaches targeting differing cancer-related problems.

Anticipatory Nausea and Vomiting

Anticipatory nausea and vomiting (ANV) is a term used to describe the fear of a conditioned negative response (i.e., nausea and vomiting) often associated with patients who have undergone chemotherapy. It occurs when previously neutral stimuli (e.g., colors and sounds associated with the treatment room) acquire nausea-eliciting properties due to repeated association with chemotherapy treatment and its negative aftereffects. Anticipatory nausea and vomiting have been linked to lower quality of life in patients treated with chemotherapy (Figueroa-Moseley et al., 2007). Behavioral techniques such as relaxation, distraction, desensitization, and hypnosis have been found useful in reducing ANV in cancer patients (Holland & Alici, 2010). Progressive muscle relaxation and systematic desensitization procedures have been found especially effective in preventing and treating ANV (Figueroa-Moseley et al., 2007). Research also supports the use of these interventions when self-administered (Jacobsen et al., 2002).

Pain

CBT models have also been applied to alleviate pain. Pain experienced by cancer patients may stem from various sources, including tumor progression and invasion, cancer-related surgery, other diagnostic and therapeutic treatment procedures, chemotherapy, radiotherapy, hormone therapy, cancer-related infections, and musculoskeletal complaints associated with inactivity and fatigue (Keefe, Abernethy, & Campbell, 2005). Tatrow and Montgomery (2006) conducted a meta-analysis of CBT interventions for distress and pain in breast cancer patients and found that although the results were mixed, an overall effect size of 0.49 was identified, thus indicating that individuals who received CBT reported significantly less pain than controls.

Emotional Distress

There is an abundance of literature on the efficacy of CBT interventions to improve emotional outcomes, where measures of distress have included both specific (e.g., depression) and nonspecific (e.g., negative affectivity) dimensions (Jacobsen & Jim, 2008). In general, more recent CBT studies conducted with breast cancer patients have utilized larger samples, randomized controlled designs, a minimum of 3 months follow-up, and controls for confounders of immune variables. These studies have been based on interventions using CBT techniques to target distress (e.g., stress management), to promote better sleep quality, or in combination with health education to facilitate improved quality of life (Andersen et al., 2004; Antoni et al., 2001; Savard, Simard, Ivers, & Morin, 2005). Osborn, Demoncada, and Feuerstein (2006), in conducting a meta-analysis of such studies, found a large effect size \((d = 1.99)\) for CBT interventions in the posttreatment periods.

A representative example of this literature is a study conducted by Antoni and colleagues (2001). In this investigation, 199 women with breast cancer who were 4 to 8 weeks postsurgery were assigned either to a 10-week group-based cognitive-behavioral stress management (CBSM) condition or to a 1-day psychoeducational control group. CBSM
combined training in anxiety-reduction techniques, such as progressive muscle relaxation, guided imagery, deep breathing, and meditation, with other CBT techniques, such as cognitive restructuring, coping skills training, and interpersonal skills training. Women in the intervention condition, as compared to the control, showed improvements in psychological adaptation, including decreased cancer-specific intrusive thoughts, general anxiety symptoms, rates of depression, and interpersonal disruption, as well as increased benefit finding, optimism, positive affect, and positive states of mind. Importantly, these effects held up to 12 months later (Antoni et al., 2006).

**Fatigue**

Fatigue has been identified as one of the most pervasive and distressing of symptoms experienced by cancer patients, especially those with advanced disease and those being treated with chemotherapy or radiotherapy (Ahlberg, Ekman, Gaston-Johansson, & Mock, 2003). Although mechanisms for the development and persistence of cancer-related fatigue are only somewhat understood, cognitive and behavioral problems are thought to contribute to the worsening and chronicity of such fatigue. Researchers have examined the utility of CBT interventions with promising results (Kangas, Bovbjerg, & Montgomery, 2008; Jacobsen, Donovan, Vadaparampil, and Small, 2007, for example, conducted a systematic review and meta-analysis of RCTs involving adult cancer patients to evaluate the efficacy of psychological and activity-based interventions with regard to cancer-related fatigue. Results indicated that 50% of psychological interventions and 44% of activity-based interventions of fair or better methodological quality demonstrated significant benefits for those in intervention groups. Results revealed a small, but significant, intervention effect, displaying stronger evidence for psychological interventions than for activity-based interventions.

Van der Lee and Garssen (2010) evaluated mindfulness-based cognitive therapy in a sample of randomly assigned cancer patients experiencing severe chronic fatigue 1 year after their last anticancer treatment. The participants in the intervention group received mindfulness-based training, which combined elements of cognitive therapy and mindfulness-based stress management. Analyses yielded a posttreatment clinical improvement in 30% of treated participants versus 4% of wait-list controls. Results also indicated a significant reduction in fatigue and improvement in well-being postintervention and at a 6-month follow-up.

**Problem-Solving Therapy (PST) for Cancer Patients**

Multiple intervention studies have used components of problem-solving therapy to reduce the physical and emotional effects of cancer for both patients and their families (Jacobsen & Jim, 2008; McGregor & Antoni, 2009; Moyer et al., 2009; Pitceathly et al., 2009). Problem-solving therapy (PST) is an evidence-based, cognitive-behavioral intervention that promotes the adoption and effective application of adaptive problem-solving attitudes and skills to solve stressful problems in living (Nezu, 2004; Nezu & Nezu, 2012; Nezu, Nezu, Houts, Friedman, & Faddis, 1999). In PST-tailored protocols for cancer patients, individuals are helped to cope more effectively with cancer-related stressful problems by learning skills designed to successfully resolve such problems and/or better manage their negative emotional reactions to such difficulties (Nezu, Nezu, Friedman, Faddis, & Houts, 1998; C. M. Nezu et al., 1999).

An example of an RCT that evaluated the efficacy of PST for distressed cancer patients is the study referred to earlier as the “black swan” by Coyne and Lepore (2006), that is, the investigation conducted by Nezu and colleagues (2003). In this study, 132 adult cancer patients were randomly assigned to one of three conditions: (1) ten 1.5-hour sessions of individual PST, (2) ten 1.5-hour sessions of PST provided simultaneously to both the cancer patient and his or her designated significant other (e.g., spouse, partner, adult family member), or (3) a treatment-as-usual control. Results at posttreatment across several self-reports, clinician ratings, and ratings by significant others provide strong evidence in support of the overall efficacy of PST for decreasing emotional distress and improving the overall quality of life of patients with cancer. Specifically, participants in both treatment conditions demonstrated significant improvement as compared to individuals in the control condition. At posttreatment, no differences were found between these two PST-based conditions. However, at a 6-month follow-up assessment, on approximately half of the variables assessed, patients who received PST along with a significant other continued to improve significantly beyond those individuals receiving PST individually, highlighting the advantage of formally including a collaborative person in treatment. These positive effects of PST were not only statistically significant but also highly clinically significant as well. Moreover, analyses indicated that improvements in problem solving correlated significantly with decreases in psychological distress and improvements in overall quality of life.
During the past several years, several collaborative care interventions have targeted depression among individuals suffering from various chronic illnesses, including cancer. Collaborative care is a population-based health services model that originally was developed to provide evidence-based pharmacologic and psychosocial therapies to persons with depression seen in primary care settings (Katon & Seelig, 2008). Essentially, it is a stepped-care approach whereby a depressed patient is offered a choice of beginning treatment with antidepressant medication or problem-solving therapy (PST). If those patients who initially chose the medication intervention did not respond to optimal dosages, their antidepressants would be augmented or changed, or PST could be added. Similarly, if PST as the first choice was not initially efficacious, antidepressant medication could be added.

An example of such an approach to treat depressed cancer patients is a study conducted by Ell and colleagues (2008). Study patients were 472 low-income, depressed, predominantly Latina patients with cancer who were randomly assigned to either the collaborative care intervention or enhanced usual care. At 12 months, 63% of the intervention patients reported a 50% or greater reduction in depressive symptoms as compared to baseline, as well as significantly greater quality-of-life outcomes and enhanced emotional, functional, and physical well-being, as compared to control participants, thus supporting the overall efficacy of such a model of care.

**Group Therapy Approaches**

In the past, research evaluating group therapy interventions has tended to focus on supportive-expressive therapy modes with female breast cancer patients. Within the cancer population, group therapy has gradually expanded to include other psychotherapeutic models (e.g., CBT) and other types of cancer populations (e.g., ovarian cancer). Sherman and colleagues (2004) describe the advantages of group therapy for cancer patients as providing a forum for peer support, a sense of universalism and shared experience, an opportunity to learn from others experiencing similar challenges, less stigmatization, and lowered cost. Their review of the group therapy literature yielded the following conclusions: (a) brief psychoeducational groups for patients with limited disease produce short-term benefits, although effects are discrepant regarding long-term improvement; (b) evidence for brief, less-structured groups is even more muddled; and (c) long-term, interactive groups for patients with advanced disease also offer benefits but may require lengthier intervention for effects to surface. Although many investigations employing group interventions target emotional functioning, outcomes also include medical knowledge, social functioning, health-related quality of life, sleep, immune activity, and symptom burden (Sherman et al., 2004).

Spiegel, Bloom, Kraemer, and Gottheil (1989) reported improved survival, mood, pain, and coping skills in metastatic breast cancer patients after a support group intervention that involved building bonds, expressing emotions, “detoxifying death and dying,” redefining life priorities, increasing support of friends and family, improving doctor–patient relationships and improving coping skills. With regard to its efficacy on survival rates, unfortunately, such results were not replicated (Fox, 1998). In reviewing five randomized controlled trials of group therapy interventions for metastatic breast cancer patients, Edwards and colleagues (2008) concluded that the collective findings tended to mimic the results of the Sherman and colleagues (2004) study; that is, although these interventions provided short-term psychological improvements, they did not last longer than a few months.

**Therapeutic Processes**

Researchers have also examined the potential impact of shared generic commonalities among psychotherapeutic interventions, such as empathy, therapeutic alliance, group cohesion, collaboration, therapeutic openness, and therapeutic realizations. A recent systematic review of four empirically supported relationship factors (i.e., therapeutic alliance, empathy, goal consensus/collaboration, and group cohesion) found that therapist-rated rapport and group cohesion were significantly related to positive outcomes (Schnur & Montgomery, 2010). Due to the paucity of literature examining therapeutic relationship factors in the cancer population, researchers suggest further investigation of these factors to ascertain their contribution to psychotherapeutic outcomes. As part of a secondary analysis of a previously conducted RCT, Manne and colleagues (2010) investigated three nonspecific therapy components (i.e., therapeutic alliance, therapeutic realizations, and therapeutic openness/involvelement) in the treatment of 203 women with gynecological cancers who were initially randomly assigned to a supportive counseling intervention (SC) or a coping and communication skills intervention (CCI). They found that these therapy processes were, in fact, involved in predicting short- and long-term treatment outcomes.
Telephone and Internet Approaches

As technology evolves, so do the methods of communicating with patients. These advances to the health-care system involve education, information, and support via the telephone, Internet, and other techniques (e.g., CD-ROM) to facilitate disease prevention and management (Stretchner, 2007). In addition to such health services, psychologists have adapted psychotherapeutic interventions to incorporate such technologies. Due to the wide availability of these communication media, a growing number of studies have been devoted to examining the utility of these modalities (Mohr, Vella, Hart, Heckman, & Simon, 2008).

Cancer patients throughout the United States are provided free, nationally accessible resources, such as Web sites and helplines. These resources provide education, counseling, and emotional support, as well as other services (e.g., financial, legal, and transportation assistance) to individuals and families affected by cancer (Institute of Medicine, 2008). Although there is a dearth of research on the effectiveness of such psychosocial services in comparison to face-to-face interventions, researchers have begun to examine the efficacy of these methods. Telephone-based interventions have been employed as a means of overcoming barriers (e.g., time constraints, transportation problems, caregiving responsibilities, stigma concerns, disability, living in a rural area) to the traditional method of providing treatment face-to-face (Mohr et al., 2008). In addition to the nationwide resources available to cancer patients, psychologists have adapted psychotherapeutic interventions to a format deliverable by telephone. Many of these interventions have been developed to address problems associated with cancer (e.g., fatigue and depression). Although telephone-based interventions are not the primary method of delivery, some investigations, thus far, have supported the value of this approach in reducing symptom severity and distress and in improving self-management (Ream, Richardson, Wiseman, Hughes, & Forbes, 2009).

As an example of PST delivered by telephone, Allen and colleagues (2002) conducted a study where PST was provided to women with breast carcinoma as a means of coping with a range of difficulties when diagnosed in midlife. Specifically, six PST sessions were provided to 87 women with breast cancer; two were in person, and the middle four were provided by a nurse over the phone. Whereas PST was found generally to be an effective approach, results were not as supportive of the efficacy of this method of providing PST across all subjects. More specifically, relative to the control group, patients receiving PST who were characterized as “poor problem solvers” at baseline experienced no changes in the number and severity of cancer-related difficulties. However, patients with average or “good” problem-solving skills at baseline were found to have improved mental health as compared to controls as a function of the intervention. Collectively, these results suggest that a more intensive form of this intervention (e.g., more sessions, more face-to-face contact) may have been required for individuals with particularly poor premorbid problem-solving ability.

More recently, Marcus and colleagues (2010) conducted a large RCT evaluating the efficacy of a telephone-counseling program with early-stage breast cancer survivors. The intervention group received 16 telephone-counseling sessions over a 1-year period, along with supplemental print materials. The intervention was delivered by graduate students and consisted of cognitive, behavioral, and stress management modules. The control group received a resource directory of psychosocial services for breast cancer. Distress, depression, sexual dysfunction, and personal growth outcomes were assessed at baseline and 3, 6, 12, and 18 months postenrollment. Results indicated significant improvements in sexual dysfunction and personal growth from baseline to both 12 and 18 months for both groups, although the improvement was greater for the intervention group. Both groups showed significant reductions in depression and distress outcomes over time, but when scores were dichotomized clinically, only the intervention group showed a significant improvement in these outcomes from baseline to the 18-month follow-up. Positive enrollment and retention rates were reported as consistent with other telephone-based interventions, a benefit of using this telephone-based approach. Researchers concluded that the telephone intervention was a viable method of disseminating psychosocial services to cancer survivors.

Another recent investigation examined the effect of telephone-based information and support via phone calls to male cancer patients referred to a cancer helpline by an urologist, surgeon, or outpatient clinic (Livingston et al., 2010). Newly diagnosed males with colorectal or prostate cancer were randomized to one of three arms in which they received four phone calls from the helpline, received one call from the helpline, or were told to call the helpline on their own initiative. These investigators concluded that although men discussed treatment management and psychological/emotional issues during the calls,
the intervention had little psychological impact. They further suggested that perhaps no differences among conditions occurred because this intervention did not target men who reported elevated distress.

Mohr and colleagues (2008) performed a meta-analysis of 12 telephone-based psychotherapeutic interventions for depression in cancer patients and included studies comparing telephone-administered psychotherapy to treatment as usual. Analyses revealed a significant reduction in depressive symptoms of patients receiving psychotherapy compared to individuals in the control group and a significant change in depressive symptoms from pretreatment to post-treatment for the intervention groups. According to Mohr and colleagues (2008), such findings support the use of telephone-based psychotherapeutic interventions to reduce symptoms of depression in cancer patients, with the added benefit of lower attrition rates than those typically found in face-to-face psychotherapeutic interventions.

Similar to the use of telephones, Web-based resources offer patients the ability to access cancer-related information, social support, and health interventions through a low-cost, widely available vehicle (Salzer et al., 2010). Web-based interventions can include the use of e-mail to contact a therapist, chat rooms and newsgroups to connect with peers, and enhanced accessibility (Griffiths, Lindemeyer, Powell, Lowe, and Thorogood, 2006). In addition, the Internet can provide a method of delivering an intervention at a lower cost in a timely manner, in a way that may be more convenient to users with less stigmatization, with increased control by both providers and patients, and through a means that diminishes geographic, time-, and mobility-based isolation barriers (Griffiths et al., 2006).

Owen and colleagues (2005) examined the effect of a self-guided, Internet-based coping skills training program on the quality of life of 62 women diagnosed with early-stage breast cancer. Participants were randomized to either a small online coping group or a wait-list control condition. The treatment condition involved coping skills training exercises, asynchronous online group discussion, information about and advice for managing physical symptoms, various breast cancer resources, and a forum for sharing artwork and poetry. The coping skills exercises lasted 12 weeks and aimed to facilitate the identification and expression of emotions and promotion of a positive appraisal of cancer-related stress. Although limitations (e.g., low power due to small sample) of the study must be considered when interpreting findings, researchers reported a significant interaction of health status by treatment (i.e., women with poorer self-perceived health status showed greater improvement in perceived health after receiving the intervention).

Similar to the inconsistent findings about psychosocial interventions in the cancer population, investigations of Internet-based interventions yield results that are sensitive to intervention type, content, and population. Salzer and colleagues (2010) conducted a pilot study examining psychological distress and quality of life in 78 recently diagnosed breast cancer patients. Women were randomly assigned to an Internet peer support group that was not moderated or an Internet-based educational control group. Contrary to the investigators’ hypotheses, those in the Internet peer support condition did worse over time on targeted outcomes. Further, no differences existed between groups with regard to perceived social support, self-efficacy, and hope.

Although the benefits of telecommunication technologies have been demonstrated, they also have disadvantages. For example, Mohr and colleagues (2010) reported that, among large groups of primary care patients interested in behavioral treatment, 91.9% were interested or would consider face-to-face intervention, compared to 64.6% for telephone, and 48% for care via the Internet. Stretcher (2007) stated that although the majority of adults in the United States have Web access, the quality of much of the information on the Internet can be problematic. Individuals are often exposed to misinformation, are required to sort through a plethora of information, and may lack privacy in physical space, which could hamper the disclosure of sensitive information.

Effects of Psychosocial Interventions on Health Outcomes and Immune Functioning

In addition to its effects on psychological well-being and quality-of-life dimensions, research has also attempted to determine whether psychosocial interventions can actually improve health outcomes, such as survival rates among cancer patients. Unfortunately, the research remains tentative in its ability to provide a definitive answer (Nezu, Nezu, Felgoise, & Peskin, 2003). For example, two oft-cited studies (Fawzy et al., 1990; Spiegel, Bloom, & Yalom, 1981) that initially found positive effects of psychological interventions on survival rates of cancer patients were never replicated (Coyne, Stefanek, & Palmer, 2007). However, on the other side of the debate, based on their meta-analysis examining the effects of psychological interventions on survival time in cancer patients, Smedslund and Ringdal (2004) suggested that a definite conclusion regarding this issue is premature. Additional research that
indirectly supports such a statement is a meta-analysis indicating that psychosocial distress is associated with higher cancer incidence, poorer survival, and higher cancer mortality (Chida et al., 2008), suggesting that additional research addressing the effects of psychosocial interventions on biological and health outcomes is warranted.

A more recent example of this type of research was conducted by Andersen, Shelby, and Golden-Kreutz (2007), who tested the effects of a psychological intervention on health outcomes, as well as the pathways through which such change might occur. In this investigation, 227 postsurgery breast cancer patients were randomly assigned to intervention or control groups and assessed for psychological (distress), biological (immune), and health outcomes (e.g., performance status, symptomatology) at baseline and 4, and 12 months later. The intervention incorporated various topics and techniques that had been found effective in other studies (e.g., progressive muscle relaxation, positive coping, problem solving, and use of social support). In support of their hypotheses, these researchers found that their intervention both directly and indirectly improved health outcomes as measured at the 12-month assessment point.

In a subsequent analysis of this RCT, Andersen and colleagues (2008) evaluated whether participants in the intervention condition showed improved survival compared to patients in the control condition. At a median of 11 years later, patients in the intervention group showed a reduced risk of breast cancer recurrence and reduced mortality caused by breast cancer. In addition, Andersen and colleagues (2010) further examined differences in survival after recurrence among the original study sample. Data on psychological, social, adherence, health, and immune (e.g., natural killer cell cytotoxicity and T cell proliferation) outcomes were collected from 41 participants 4, 8, and 12 months after diagnosis with recurring breast cancer. They found that all patients experienced significant distress after a recurrence diagnosis, but thereafter, only those in the intervention group improved. Results also indicated that patients in the intervention condition showed a reduced risk of death following recurrence, as well as significantly higher immune indices compared to those in the control group at 12 months.

Although such findings appear optimistic, the impact of psychological interventions on survival needs further investigation. The investigation conducted by Andersen and colleagues (2008) employed an intervention consisting of multiple psychotherapeutic components over a period of 1 year with one sample. It is unclear which components of the intervention are necessary to produce the demonstrated benefits and whether such improvements are likely to be found in cancer populations other than breast cancer. Replication of this study is needed. Moreover, prior to the publication of these findings, Coyne and colleagues (2007) suggested that prior research that had similar aims of examining increased survival after psychological intervention were methodologically flawed. Further, in criticizing the study by Andersen and colleagues (2008), Stefanek, Palmer, Thombs, and Coyne (2009) reasserted their position that no support existed for the survival benefits attributable to psychosocial intervention. As such, it would appear that the debate continues.

FAMILY AND CAREGIVER ISSUES

In addition to the effects on patients themselves, the experience of cancer and its treatment can significantly affect the lives of family members, in particular, the primary caregiver, such as a spouse or partner (McClure, Nezu, Nezu, O’Hea, & McMahon, 2012). With shifts in health-care economics, especially toward the end of the 20th century, more care and recovery of cancer patients takes place at home, therefore with a potentially greater impact on the roles and responsibilities of family members (Houts, Nezu, Nezu, & Bucher, 1996; Laizner, Yost, Barg, & McCorkle, 1993). The Administration on Aging (2008) estimates that more than 44 million individuals are informal, unpaid caregivers to family or friends with disabilities or who need assistance with at least one activity of daily living. Approximately 25% of the adult population can expect to serve others in such a capacity. The estimated economic value of lay caregivers’ provision of care is $306 billion annually. In response, this shift in caretaking has also increased professionals’ attention to the vital roles, participation, and impact that the experience of cancer has on families and caregivers as they become the extension of the health-care team (Friedman, 1999).

Impact of Cancer on Caregivers

The potential demands and subsequent burden on caregivers are significant. For example, in a study by Barg and associates (1998), 61% of a sample of 750 caregivers reported that caregiving was the center of their activities. In addition, 58% of this sample indicated that to provide care, caregivers were required to give up many other activities. For the majority of caregivers (62%), their responsibilities to the patient warranted 24-hour-per-day
availability, whereas the remainder of the sample provided 6 to 40 hours of care per week.

Because caregivers are laypersons who usually have not had professional training in preparation for caring for an individual with cancer, such demands and responsibilities can lead to significant distress (Rivera, 2009). For example, in the Barg and colleagues (1998) sample, 89% of the caregivers reported feeling stressed by their responsibilities. In addition, the caregivers who experienced more stress also reported significantly lowered self-esteem, less family support, more negative impact on their physical health, and more caregiving demands than nonstressed caregivers. Reviews of the extant literature suggest there is emotional convergence or positive relationships between patients’ and caregivers’ distress levels (Hodges, Humphris, & Macfarlane, 2005; Naaman, Radwan, & Johnson, 2009).

**Psychological Distress**

In a study conducted by Keller, Heinrich, Sellschop, and Beutel (1996), 67% percent of a sample of caregivers of spouses with various cancer diagnoses reported high to very high illness-related distress levels. Further, Gladam, Jensen, Madsen, and Rose (1996) found significantly high levels of anxiety in 18% of 102 spouses of cancer patients, with an additional 32% of caregivers characterized as borderline cases. In addition, a recent study of 339 colorectal cancer patients found significant marriage by gender interaction effects in predicting psychological distress (Goldzweig et al., 2009). Specifically, men expressed more psychological distress than women, and unmarried persons reported more distress than married patients. Fear of recurrence is another manifestation of psychological distress found in a sample of 101 caregivers of head and neck cancer patients (Hodges & Humphris, 2009). Married women and unmarried men reported less distress than unmarried woman and married men. Further, studies of spouses of cancer patients, many in the terminal stage of care, have reported eating disorders, sleep disturbances, anxiety, and depression due to the stresses of caregiving (Kristjanson & Aschercraft, 1994).

**Distress in Parents of Children with Cancer**

In a longitudinal study comparing pediatric cancer patients and their parents with matched controls, mothers of cancer patients were found to be more distressed than mothers of noncancer patients during treatment (Robinson, Gerhardt, Vannatta, & Noll, 2009). No differences were found post-treatment, although mothers of cancer patients perceived their children to have more negative internalizing disorder symptoms. Further, some effects were found to suggest initial parental distress was related to later young adult internalizing symptoms. This study is consistent with an earlier meta-analysis (Pai et al., 2007) of 29 studies that found that mothers and fathers of children with cancer experienced greater distress than control groups. In addition, mothers reported greater distress than fathers at the time of diagnosis and up to 1 year later. Further, mothers perceived their families as having greater conflict when a child had a cancer diagnosis compared to mothers of healthy children.

Fewer studies address how families function when parents of small children have cancer. Studies have tended to use qualitative methodology as a means to explore this research area. For example, a qualitative study of families with children age 2 to 9 describes reorganization, rituals, and attempts to create normalcy and stability for the family (Buchbinder, Longhofer, & McCue, 2009). Children older than 7 and their parents with cancer diagnoses participated in semistructured interviews that focused on coping and adjustment to diagnoses and life changes (Kennedy & Lloyd-Williams, 2009). Themes addressing initial diagnoses, life changes, coping mechanisms, and positive aspects of the experiences were evaluated. Of note, children perceived having more responsibilities and less time for social activities, although they learned to place greater value on family members and intangible aspects of life. In another study, 56 adolescents of mothers with breast cancer participated in a quantitative study of stress responses and psychological functioning (Edwards et al., 2008). Findings suggested that male and female adolescents experience a high rate of stress (33% and 45%, respectively) and psychological problems (28% and 32%, respectively) and that maternal depression is linked to self-reported internalizing problems in adolescents.

**Impact on Health**

The stress of caregiving has also been shown to have negative biological (e.g., immunologic, cardiovascular, metabolic) consequences for family caregivers (Vitaliano, 1997). For example, 62% percent of a sample of 465 caregivers reported declines in health resulting from their caregiving experiences (Haley, LaMonde, Han, Burton, & Schonwetter, 2003). Whereas some research (e.g., Hinds, 1985; Oberst, Thomas, Gass, & Ward, 1989) has identified significant relationships between patients’ and caregivers’ physical health, as well as patients’ physical health and caregivers’ emotional reactions, other studies have found that the physical health of the cancer patients across varying cancer diagnoses and stages did not directly affect
the health of the caregiver. In fact, the patients’ emotional well-being has been found to be a better predictor of caregiver distress. For example, in a study of 196 patient-caregiver dyads, patient depression, and not the patient’s medical status, mediated the relationship between patient dependencies, symptom distress, and patient immobility on caregivers’ physical health (Given et al., 1993).

Unmet Caregivers Needs

In addition to the impact on their psychological and physical health, caregivers have also reported that many of their needs as caregivers continue to go unmet (Houts, Nezu, Nezu, & Bucher, 1996). For example, Hinds (1985) interviewed 83 family caregivers and found that 53% of this sample identified several areas of unresolved psychosocial needs. Sixteen percent of a different sample of 45 caregivers reported serious unmet needs, where 49% considered unmet informational needs to be a significant problem (Dyck & Wright, 1985). Interestingly, Sales, Schulz, and Biegel (1992) found that younger caregivers reported more psychological and personal needs than older caregivers.

Psychosocial Interventions for Caregivers

As a function of the increased vulnerability to negative psychological and physical effects of the cancer-related caregiving role, various intervention strategies have been developed to help these individuals. Such strategies include psychoeducational and problem-solving approaches.

Psychoeducational Interventions

Deridiarian (1989) evaluated a psychoeducational intervention that provided medical, counseling, and referral information to caregivers, followed by two telephone calls to check the adequacy of the information. This protocol was compared to standard care. The aim was to measure the caregivers’ satisfaction with the information received and their perceived coping with the consequences of the diagnosis (i.e., behaviors indicating problem solving and emotional regulation). The results of this investigation showed significant decreases in perceived need for information and increases in satisfaction and coping as a function of participating in the experimental intervention.

Problem-Solving Approaches

Several problem-solving interventions have been developed for caregivers of persons with cancer. For example, using a randomized design, Toseland, Blanchard, and McCallion (1995) evaluated a protocol including six individual counseling sessions that included both support and training in problem-solving and coping skills. Caregivers in a control group received standard medical care. Initial overall results comparing the intervention to usual treatment showed no difference on a wide range of measures. However, post hoc analyses evaluating the interaction of distressed and moderately burdened caregivers by condition showed favorable outcomes for patients in the treatment condition. Specifically, distressed caregivers who participated in the intervention reported significant improvement in their physical, role, and social functioning. In addition, burdened caregivers significantly improved their ability to cope with pressing problems.

Houts and colleagues (1996) and Bucher, Houts, Nezu, and Nezu (1999) described a problem-solving approach to family caregiver education called the “prepared family caregiver course,” which was adapted from the D’Zurilla and Nezu (1999; Nezu et al., 1998) problem-solving therapy model. The course was taught over three 2-hour group sessions and included prepared instructional videotapes to guide interactive practice exercises, along with an instructor’s manual (Bucher et al., 1999). The Home Care Guide for Cancer (Houts, Nezu, Nezu, Bucher, & Lipton, 1994), an informational resource consistent with this model, was also a key element to this training.

The premise for the problem-solving approach was the idea that successfully solving problems increases one’s sense of mastery and control, which, in turn, contributes to positive mental health. Further, information, and a framework in which to gather additional information and solve problems, can allay the uncertainty caregivers often feel: “Have I done everything that I can do?” (Houts et al., 1996). Caregivers are provided with information about a series of medical (e.g., fatigue, hair loss) and psychosocial (e.g., depression, loneliness) problems and trained to (a) better define the problem; (b) know when to obtain professional help; (c) learn to deal with, as well as prevent, a problem; (d) identify obstacles when they arise and plan to overcome them; and (e) effectively implement a problem-solving plan and adjust it if the initial attempts are not successful. Results from a program evaluation study including a sample of 41 caregivers indicated that 78% of these participants reported an improvement in their feelings of burden and stress (Houts et al., 1996). In addition, 48% and 58%, respectively, reported using their plans for tiredness and depression in their caregiving. Further program evaluation investigations of the prepared family caregiver course reveal a generally high level
of satisfaction and interest in using the information and problem-solving skills taught to family caregivers, hospice volunteers, home health aides, nurses, and people with cancer (Bucher et al., 1999). Obviously, well-controlled studies are necessary prior to making definitive conclusions about the potential efficacy of such an approach. However, preliminary results provide promising support.

SUMMARY AND FUTURE DIRECTIONS

Cancer is the second-leading cause of death in the United States, surpassed only by heart disease. Despite its prevalence as a medical disease, only about 5 to 10% of all cancers are clearly hereditary. A variety of lifestyle activities have been identified as potential risks for cancer, such as smoking, alcohol abuse, diet, and excessive exposure to the sun. Because such factors are behavioral in nature, the relevance of psychology for the field of psychosocial oncology is clear. This emerging subfield of oncology is not only concerned with the role of cancer-related behavioral risk factors but also with the identification of efficacious means to reduce such risk factors, as well as to better understand and positively affect the negative psychosocial consequences of cancer, such as emotional distress and decreased quality of life. The past few decades have seen an increase in interest by psychologists in this field and the development of effective strategies of meeting these goals.

Based on our review of the literature, we offer several recommendations for future research that are focused mainly on intervention studies:

1. More research should be conducted regarding efficacious interventions to improve the quality of life of cancer patients and their families. Although a substantial body of research already exists, we need to know more about what types of treatment approaches are effective for what types of patients as a function of type of cancer, stage of cancer, SES, ethnic background, level of stress experienced, and other important patient-relevant psychosocial variables. Because of the significant personal, medical, and economic impact cancer and its treatment represent, more research evaluating the efficacy of a wide range of psychosocial strategies should be conducted in the future.

2. More research should be conducted regarding the effects of psychosocial interventions on health outcome (i.e., prolonged survival). Currently, as described earlier, the literature is equivocal in its ability to indicate whether psychosocial treatments can have an impact on health outcome, particularly with regard to prolonging the life of a cancer patient.

Many of the studies that provide support for or against such a hypothesis were not designed to specifically address this question. Well-controlled investigations capable of addressing such a question require extensive resources. However, preliminary results suggest that such efforts may be warranted.

3. Improve the methodological rigor of the research. Because a thorough critical analysis of the reviewed literature was beyond the scope of this chapter, we did not document the many methodological limitations identified across the studies. We will not belabor the point, except to list specific recommendations: (a) include adequate control groups, (b) use manualized protocols, (c) include treatment integrity (i.e., therapist adherence and competence) measures, and (d) use more multimodal assessment procedures (e.g., multitrait, multimethod approaches) for outcome measurement. In addition, special care needs to be taken in describing each population under study in detail to allow meaningful comparisons across studies.

4. Conduct component analyses of the intervention studies. The majority of the randomized outcome studies reviewed simply compared an intervention to either an alternative treatment approach (e.g., education) or a control condition (e.g., wait-list). Additional research strategies should be implemented to help answer the question: “Which treatment components are responsible for the actual improvement in symptoms?” Future research needs to be more explicit in delineating specific treatment strategies and provide an assessment of the specific impact of a particular intervention on a given hypothesized mechanism of action and its resulting impact on changes of interest. In that manner, a more comprehensive and microanalytic understanding of cause–effect relationships can be obtained. Such research strategies include dismantling, constructive, and parametric approaches. In addition, matching studies (i.e., matching treatment strategies with identified patient vulnerabilities, for example, problem-solving therapy for the depressed cancer patient with identified problem-solving deficits) also fall in this category.

5. Identify important moderators of treatment efficacy. Identification of important moderator variables (e.g., race, age, gender, cultural background, severity of symptoms, number of symptoms) can potentially lead to better matching of a given treatment for a particular patient, as well as the development of more effective interventions per se.
6. Identify important mechanisms of action. Future research should also address the relationship between outcome (e.g., psychological well-being, improved health) and a variety of variables (e.g., cognitive, emotional, behavioral, immune system) hypothesized to contribute to the etiopathogenesis and course of that outcome. In this manner, salient treatment targets can be identified and more empirically based decisions about treatment design can be made.

7. Improve treatment implementation and access. Related to the issue of health economics, future research should also attempt to save costs directly related to implementing psychosocial interventions. Having a doctoral-level psychologist, for example, providing individual or group therapy to cancer patients and their families is likely to be viewed as having too high a price to the health-care delivery system. As such, studies geared to assess alternative means of conducting psychosocial interventions should be conducted in the future. For example, additional methods exist to conduct such treatment approaches besides the traditional use of a single therapist in face-to-face situations. Use of videos, computers, the Internet, or telemedicine support systems represent further possibilities regarding ways to cut costs, as well as to increase accessibility to patients not living close to a major medical center.

8. Bridge the gap in diversity-related health-care disparities. Despite improvements in medical science, huge gaps in research and practice still remain for various ethnic minority populations. As a consequence, Willet (2004) suggested that such minority and disadvantaged groups were less likely to benefit from knowledge about cancer prevention and early detection for various reasons (e.g., less access to healthy foods, cultural beliefs about individual decision affecting one’s fate). Kagawa-Singer, Dadia, Yu, and Srbone (2010) emphasize the necessity for improving health disparities in cancer, such as racial differences in incidence, morbidity, avoidable suffering, and mortality. These authors point to the insufficiencies of intervention research with regard to minority populations. As such, future research needs to reduce barriers in the delivery of evidence-based, high-quality cancer care to these diverse populations.

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Psychosocial Oncology


290 Diseases and Disorders


