Approximately 1.7 million people in the U.S. will be diagnosed with cancer in 2018. Cancer is a group of more than 100 diseases linked by the commonality of the uncontrolled growth and spread of abnormal cells (American Cancer Society [ACS], 2018). More than 15.5 million Americans are living with a cancer diagnosis, a figure that is expected to rise to approximately 20 million by 2026 (ACS, 2017).

As scientists, health psychologists study biopsychosocial contributors to the initiation and progression of cancer, as well as influences on adherence to screening recommendations for early detection of cancer. They conduct research to understand the experience’s impact on quality of life and health, as well as influences on cancer survivors’ (spanning from the time of cancer diagnosis through the end of life) and loved ones’ adjustment. They also develop and test interventions to promote favorable psychological and physical health. As health care professionals, health psychologists deliver the evidence-based interventions to promote cancer prevention and surveillance, as well as provide services to enhance quality of life and health.

Treatments for cancer, which most often include surgery, chemotherapy, and radiation, are advancing, with new targeted biologic therapies, immunotherapies, and hormonal therapies having success. At the same time, cancer treatments often cause distressing side effects such as nausea/vomiting, hair loss, hot flashes, and sleep disturbance that influence quality of life. For some cancer survivors, some side effects do not remit (e.g., fatigue), and others can emerge later after treatment is completed (late effects, e.g., lymphedema or swelling). Considerable variability is seen in side effects across specific treatments and across individuals receiving the same treatment. Beyond the potential for side effects, the experience of cancer can affect all major life domains.

This chapter summarizes the extensive evidence in psycho-oncology to which health psychologists have contributed. We briefly describe behavioral and psychological influences on cancer initiation and progression and then address psychological reactions to cancer and contributors to those reactions. We end by summarizing relevant evidence-based interventions to enhance cancer screening and quality of life. Other sources are available on important topics that we do not cover, including pediatric cancers (Kreitler, Ben-Arush, & Martin, 2012) and responses of caregivers to a loved one’s cancer (Kim & Loscalzo, 2018; Revenson et al., 2016).
Cancer Epidemiology

Cancer is responsible for approximately 8.8 million deaths each year globally (World Health Organization [WHO], 2018). In the U.S., breast cancer is the most commonly diagnosed cancer (as it is globally), followed by cancers of the lung, prostate, and colon/rectum. Only heart disease exceeds cancer as the leading cause of death. Worldwide, cancer accounts for approximately one in six deaths, and lung cancer is responsible for the greatest number of cancer deaths annually (ACS, 2018; WHO, 2018). Changes in behavior, primarily the decline in tobacco use, along with advances in prevention, early detection, and treatment, have contributed to a 26% improvement in survival since 1990 in the U.S. These factors, as well as the aging of the population, result in a rising number of cancer survivors.

Although survival rates are improving, socioeconomic and racial/ethnic disparities in cancer-related mortality persist. In the U.S., mortality from cancer is higher among African Americans than any other racial or ethnic group. Mortality rates from cancer are 24% and 14% higher in African American men and women, respectively, compared to non-Hispanic white men and women (ACS, 2017). A complex combination of economic, sociocultural, biological, and system-level factors contributes to disparities. They include inequalities in education, income, and employment, as well as barriers to the receipt of high-quality health care services for survivors (ACS, 2017).

Contributors to the Initiation and Progression of Cancer

Health Behaviors That Contribute to Cancer Initiation and Progression

The list of behavioral contributors to the development and progression of cancer is long and firmly established. For example, smoking tobacco contributes to the development of more than ten different cancers. Cigarette smoking accounts for 19% of cancer cases and 28.8% of deaths from cancer in the U.S. (Islami et al., 2018). Using reliable and nationally representative sources of data, researchers estimated the number of cases of 26 cancers (excluding nonmelanoma skin cancers) and associated mortality rates in U.S. adults > 30 years old that were at least in part attributable to major, potentially modifiable behaviors: cigarette smoking and exposure to secondhand smoke; excess body weight; alcohol intake; consumption of red and processed meat; low consumption of fruits and vegetables, dietary fiber, and dietary calcium; physical inactivity; ultraviolet radiation (primarily through sun exposure); and six cancer-associated infections (e.g., Hepatitis C virus, human papillomavirus) (Islami et al., 2018). These factors contributed to 42% of all newly diagnosed cancers and 45.1% of cancer deaths in 2014. Clearly, systemic initiatives and behavior change are necessary for reducing the risk of cancer initiation and progression (Spring, King, Pagoto, Van Horn, & Fisher, 2015). Other chapters in this volume address theories of behavior change (Chapter 7) and the influences on health-enhancing and risk behaviors (see Chapters 8–11). As is clear from those chapters, understanding contributors to important health behaviors can promote the development of interventions that target multiple levels of influence on behavior, from regulatory initiatives to individual-level measures (Spring et al., 2015). For example, the impressive reduction in tobacco use in the U.S. is due largely to public policy and environmental interventions such as anti-smoking campaigns, clean air laws, and price deterrents. Preventive and intervention approaches at the group and individual level also account for some of this success. Such initiatives are critical to improving the health of the world’s population, particularly in low- and middle-income countries (ACS, 2018).
Psychosocial Factors That Contribute to Cancer Initiation and Progression

Are people with particular personality attributes or those exposed to chronically stressful conditions more likely to develop cancer, and are they less likely to survive from the disease? These questions have captured the attention of the public and researchers alike. The belief that people with specific personality characteristics, those who are depressed, or those who have experienced major or chronic stressors are more likely to develop cancer is long-standing, but the evidence is mixed at best (Fagundes, Murdock, Chirinos, & Green, 2017; Lutgendorf & Andersen, 2015).

The question of whether psychosocial factors contribute to cancer progression and related mortality has produced much more supporting evidence than has the role of psychosocial factors in cancer initiation. The most frequently implicated factors include depression, trauma and chronic stress (including adverse childhood experiences), and social isolation (Fagundes et al., 2017; Lutgendorf & Andersen, 2015). Research has identified plausible mechanisms through which these factors could hasten disease progression. Chronic dysregulation of the autonomic and neuroendocrine systems, for example, can impair immune function and promote inflammation, which in turn can promote tumor growth, as evident in nonhuman animal models (Fagundes et al., 2017; Lutgendorf & Andersen, 2015). An active area of investigation focuses on pathways through which psychosocial factors might contribute to cancer progression (Zikos et al., 2015).

Adherence to Screening Guidelines for Early Detection of Cancer

Adherence to screening guidelines is a vital determinant of more favorable treatment outcomes and survival rates, in that cancer detected at an early stage has a considerably better prognosis than does more advanced disease. Based on the evidence regarding the balance of clear benefits over harms, the U.S. Preventive Services Task Force (2018) has issued recommendations for cervical, breast, lung, and colorectal cancer screening according to age, gender, and other known risk factors.

Although screening rates have improved over the past several decades, uptake of and continued adherence to cancer screening guidelines remain suboptimal. The majority (73%) of American women reported having a screening mammogram and 81% reported having cervical screening within the recommended period in 2013, but fewer women and men (58%) were up to date with colorectal cancer screening (Sabatino, White, Thompson, & Klabunde, 2015).

Many contextual obstacles to cancer screening have been documented. Not having a regular physician, lack of health insurance, failure of physicians to recommend screening, language barriers, and low interpersonal support for screening all constitute important barriers (Wardle, Robb, Vernon, & Waller, 2015). Health disparities are apparent, with adults of low socioeconomic status and Hispanic Americans less likely to adhere to screening recommendations than are more advantaged and non-Hispanic white Americans (Wardle et al., 2015).

Low rates of cancer screening also are associated with individual-level factors, including low education, lack of knowledge about cancer and screening guidelines, low perceived risk of cancer, fatalistic beliefs, and perceptions that screening is not consistent with social norms (Wardle et al., 2015). Mixed findings exist on the relationship between cancer-related worry and getting screened (Hay, Buckley, & Ostroff, 2005). Some evidence suggests a curvilinear relationship in which moderate worry facilitates screening, whereas very high and very low levels of worry inhibit screening (Wardle et al., 2015). Provision of clear and easily actionable screening recommendations increases adherence to screening guidelines for individuals with high cancer worry or who avoid cancer-related information (Wardle et al., 2015).
Biopsychosocial Consequences of the Cancer Experience

For most adults, cancer diagnosis and treatment are experienced as profoundly stressful. Research suggests that the majority recovers well, with little enduring life disruption. A large literature characterizes the nature and likelihood of specific biopsychosocial concomitants of cancer diagnosis and treatment, much of it pertaining to general or cancer-related psychological distress as outcomes, as well as quality of life in various domains. In this section, we discuss selected outcomes: depression and anxiety, fear of cancer recurrence, and finding benefit in the cancer experience. Additional important outcomes include cognitive impairment (Ahles, Root, & Ryan, 2012), fatigue (Bower, 2014), and pain (van den Beuken-van Everdingen et al., 2007).

Depression and Anxiety Among Cancer Survivors

Assessed with a validated interview, meta-analyses estimate the prevalence of major depression and anxiety in cancer survivors to be 16.3% and 10.3%, respectively (Mitchell et al., 2011). Some evidence suggests that cancer survivors’ anxiety might be more likely to persist than is depression (Mitchell, Ferguson, Gill, Paul, & Symonds, 2013).

As operationalized with psychometrically sound diagnostic interviews or valid questionnaires (Wakefield et al., 2015), elevated depressive symptoms are more prevalent among adults diagnosed with cancer than in the general population. The most convincing evidence comes from large-scale, prospective research in which depression is assessed in a large group of people that is followed for an extended period during which cancer is diagnosed in a subgroup and depression assessment is repeated at a later point. For example, in the Health and Retirement Study, more than 8,300 adults aged 51 to 61 years without elevated depressive symptoms completed five biennial questionnaire assessments (Polsky et al., 2005). The subgroup diagnosed with cancer (n = 583) exhibited an elevated risk of onset of marked depressive symptoms during the subsequent two years compared with those who did not have a cancer diagnosis. In a population-based cohort study conducted in Sweden, 304,118 individuals diagnosed with cancer and over three million cancer-free individuals were matched on birth year and sex. Clinical diagnoses of psychological disorders were examined from the two years preceding the cancer diagnosis until 10 years after diagnosis (Lu et al., 2016). The relative rate of depression and anxiety began to increase in the 10 months prior to the cancer diagnosis, peaked at one week after diagnosis and declined rapidly thereafter, although it remained higher through a decade later relative to the matched cohort.

Certainly, depression and anxiety confer personal burden for cancer survivors, as well as a number of other poor outcomes: unhealthy behaviors and lower medical regimen adherence (Holden, Ramirez, & Gallion, 2014; Mausbach, Schwab, & Irwin, 2015); a later return to employment after treatment (Steiner et al., 2008); and higher health care use, costs, and depression-associated hospitalizations (Dalton, Laursen, Ross, Mortensen, & Johansen, 2009; Goldstein et al., 2012). Although less studied, anxiety also is linked to negative consequences, including over-utilization of hospital care (Thomas, Glynne-Jones, Chait, & Marks, 1997).

Fear of Cancer Recurrence

In addition to generalized anxiety, fears of the cancer returning or spreading and additional cancer treatment are common. Reviewing quantitative studies, Simard and colleagues (2013) found that cancer survivors, on average, report low to moderate levels of fear of recurrence, but consider it a paramount concern and unmet supportive care need. For some survivors, fear of recurrence is intermittent, reactivated by such triggers as follow-up appointments, physical symptoms that may be
attributed to disease spread, and death of a public figure from cancer (Ghazali et al., 2013). In a large study of cancer survivors, 30% and 26% reported an unmet need for help with fear of recurrence when treatment ended and six months later, respectively (Armes et al., 2009). Some evidence indicates that higher fear of recurrence is related to survivors’ greater use of health care services (Lebel, Tomei, Feldstain, Beattie, & McCallum, 2013), but lower uptake of prescribed follow-up cancer screening (Thewes et al., 2012).

**Finding Benefit in the Cancer Experience**

Finding benefits or positive aspects of the cancer experience is reported by the majority of survivors (Jim & Jacobsen, 2008). Perceived benefits include strengthened interpersonal relationships, commitment to life priorities, life appreciation, self-regard, spirituality, and attention to health behaviors. Finding benefit increases at least through approximately the first two years after diagnosis, and then plateaus or declines (Williamson & Stanton, in press).

Finding benefit is associated with favorable psychological and physical health outcomes, although null or mixed findings also exist (Helgeson, Reynolds, & Tomich, 2006). In a rare study of trajectories of benefit finding, trajectories indicating higher, stable levels or large increases in benefit finding were associated with lower depressive symptoms (but not anxiety) across time, whereas trajectories reflecting low benefit finding were related to consistently high depressive symptoms (Zhu et al., 2018).

**Trajectories of Biopsychosocial Adjustment in Adults Diagnosed With Cancer**

The adoption of advanced quantitative modeling approaches has enabled researchers to characterize survivors’ trajectories of adjustment across time. This research allows the field to move beyond the description of a sample’s overall change over time on an adjustment indicator to the characterization of distinct trajectories of adjustment. More than a dozen studies describe trajectories of adjustment in samples diagnosed with breast, prostate, colorectal, and other cancers (e.g., Ciere et al., 2017; Foster et al., 2016; Henselmans et al., 2010; Rottmann et al., 2016; Stanton et al., 2015). Studies typically focus on the first two years after diagnosis, although some address more long-term adjustment (Dunn et al., 2013; Helgeson, Snyder, & Seltman, 2004). Adjustment is operationalized with such indicators as depressive symptoms, anxiety, and positive mood; quality of life; physical symptoms; and cancer-related fatigue and fear of cancer recurrence.

The most frequent pattern of findings involves at least three estimated trajectories (Bonanno, Westphal, & Mancini, 2011). Typically, the largest proportion of cancer survivors reveals stable, low impairment across time. Another group is estimated to recover from high initial impairment. A third group experiences relatively high impairment across time, likely representing both those survivors who have unremitting impairment associated with the cancer experience and those with long-standing premorbid problems. Less frequently seen are trajectories depicting a “delayed” peak in impairment, often shortly after the completion of primary treatment (Henselmans et al., 2010) or moderate or increasing impairment across time (Foster et al., 2016; Helgeson et al., 2004).

**Contributors to Adjustment**

Hundreds of studies address factors that influence biopsychosocial adjustment among cancer survivors. However, most of the studies are cross-sectional, limiting causal inference. In addition, many are not grounded in conceptual models of adjustment and relatively few identify predictors of distinct adjustment trajectories. When theoretical frameworks are used to shape research questions and hypotheses, the most prominently represented are stress and coping, self-regulation, and illness
perception theories (Lazarus & Folkman, 1984; Leventhal, Halm, Horowitz, Leventhal, & Ozakinci, 2005). Although they have different points of emphasis, these theories attempt to explain the substantial heterogeneity in individuals’ reactions to the cancer experience via influences in several domains: the sociodemographic context, the disease and its treatment, interpersonal processes, and intrapersonal factors (Helgeson & Zajdel, 2017; Stanton, Revenson, & Tennen, 2007).

Sociodemographic Factors

Although sociodemographic variables are relatively immutable, identifying those factors associated with positive and negative responses to cancer can aid health psychologists in targeting potentially vulnerable groups for intervention and in reducing disparities in the availability and quality of resources for cancer survivors. Also of vital importance is the specification of changeable processes that account for health disparities in cancer survivorship. Factors related to cancer survivors’ age, socioeconomic status, race/ethnicity, and gender are discussed here, but we remind the reader to look beyond between-group differences in adjustment to cancer toward the mechanisms for variation within groups and to acknowledge the intersections among factors such as gender, race/ethnicity, and socioeconomic status (Stanton et al., 2007).

Age

Younger adults experience more problems adjusting to a cancer diagnosis than do older adults (Samuel et al., 2016), which can persist (Dunn et al., 2013; Rottmann et al., 2016). This link is understandable in light of developmental processes in younger adulthood, such as establishing relationships, maintaining employment, and potentially becoming a parent. However, the presence and strength of the association varies across cancers (Bours et al., 2016) and specific quality of life indicators (Quinten et al., 2015).

Socioeconomic Status (SES)

Relatively low SES (typically operationalized through income, employment, education) generally is associated with poorer adjustment to cancer (Ashing-Giwa & Lim, 2009), with notable exceptions (Bours et al., 2016). In addition, the strength of the relationship varies with respect to the specific outcome of interest (Orom, Biddle, Underwood, Homish, & Olsson, 2018). Low SES can affect quality of life via direct and indirect pathways, including lack of access to psychological and physical health care resources and more frequent exposure to stressful conditions, for example.

Race/Ethnicity

Research is accruing on similarities and differences in the cancer experience among racial/ethnic groups in the U.S. Within many mixed findings, the most consistent evidence suggests that Hispanic adults diagnosed with cancer have compromised adjustment on several indicators relative to non-Hispanic white survivors, even after accounting for disparities in socioeconomic status (Luckett et al., 2011; Yanez, Thompson, & Stanton, 2011). Quality of life also varies across subgroups of Asian American cancer survivors (Wen, Fang, & Ma, 2014) and across facets of adjustment in African American survivors (Powe et al., 2007; Samuel et al., 2016).

Certainly, not all ethnic/racial differences favor non–Hispanic white adults. Black men diagnosed with prostate cancer evidence faster post-surgical improvement in sexual functioning than their white counterparts (Orom et al., 2018). In addition, spiritual well-being appears more favorable for Black and Latino/a cancer survivors (Samuel et al., 2016; Wen et al., 2014; Yanez, McGinty, Buitrago,
Research to specify explanatory variables for between-group and within-group differences is needed (Bustillo et al., 2017).

Gender

Women cancer survivors’ higher rates of anxiety and depression than men most often mirrors the gender differences observed in the general population (Salk, Hyde, & Abramson, 2017). Findings regarding gender differences in physical symptom reports and other facets of quality of life are mixed (Bours et al., 2016). The fact that most research focuses on the most prevalent types of cancer—breast and prostate—precludes direct comparisons between women and men.

Gender roles predict adjustment to cancer (Bright & Stanton, 2018; Kim & Loscalzo, 2018). For example, unmitigated agency, which is more frequent in men and involves disregard for others, a hostile orientation, and an inflated view of self, is associated with poorer adjustment in cancer survivors, as is unmitigated communion, which involves a concern for others to the neglect of self-care and is more prevalent in women (Helgeson, 2012). Men who perceive prostate cancer as a threat to masculinity evidence declining health-related quality of life (Hoyt, Stanton, Irwin, & Thomas, 2013).

Disease and Treatment-Related Influences

Some evidence suggests that psychological morbidity is more likely when cancer prognosis is poor. In the prospective study of the Swedish population described earlier (Lu et al., 2016), the greater prevalence of psychological disorders among those diagnosed with cancer was magnified among individuals with poor-prognosis cancers. Similarly, adults with advanced cancer who believe their disease is terminal (versus not terminal) have lower quality of life (Nipp et al., 2017). Undergoing chemotherapy predicts less favorable adjustment in longitudinal studies (Rottmann et al., 2016), as do other treatment-related consequences. For example, colorectal cancer patients who required a stoma (i.e., an opening made in the abdomen to allow waste to pass outside the body) report lower quality of life than those who did not (Bours et al., 2016). Overall, objective characteristics of cancer and its treatment account for less variance in psychosocial outcomes relative to subjective variables (Bardwell et al., 2006).

Interpersonal Influences

Much research addresses the impact of the interpersonal context on adjustment to cancer (Martire & Helgeson, 2017). The largest share of the research regards social support, which typically is operationalized as specific structural aspects of the social network (e.g., number of close friends) or perceived availability or quality of emotional, instrumental, or informational support (Uchino, 2006). Theoretically, social support influences psychosocial and physical health by buffering threat-related illness appraisals, encouraging healthy behaviors, and attenuating physiological reactivity to or promoting recovery from stress (Uchino, 2006). Cancer survivors’ perceptions of lower social and emotional support are related consistently to unfavorable psychological and physical outcomes. Research suggests that social support declines after treatment has ended. Some research shows that survivors’ perceptions of low social support predicts poorer quality of life in the years after cancer diagnosis (Leung, Pachana, & McLaughlin, 2014). For example, lower social support predicted high and stable distress across time in colorectal cancer patients (Dunn et al., 2013).

Social isolation, as assessed via structural variables (e.g., living alone, having few social contacts) or survivor-reported perceptions (e.g., loneliness), bodes ill for adjustment. Occupying fewer social roles prior to a breast cancer diagnosis predicted poorer quality of life between two to six years later, over and above the influence of medical treatment and tumor characteristics (Michael, Berkman,
Colditz, Holmes, & Kawachi, 2002). In another study, feelings of loneliness predicted worsening of the symptom cluster of pain, depression, and fatigue over one year in colorectal and breast cancer survivors (e.g., Jaremka et al., 2013).

Negative relationships with intimate partners also contribute to cancer survivors’ adjustment. For example, heterosexual women with breast cancer who reported poorer relationships with their partners were more likely to have moderate or high depressive symptoms over time than to have consistently low depressive symptoms (Rottmann et al., 2016). In a daily diary study, women with metastatic breast cancer reported higher daily negative affect when their partners reported avoiding discussion of women’s cancer-related concerns the previous day (Badr, Pasipanodya, & Laurenceau, 2013). Kayser and colleagues (2018) provide a systematic review regarding colorectal cancer survivors and partners.

Dyadic coping—the perception that the illness is a shared threat for the dyad and is jointly managed—can be protective for cancer survivors. When women with breast cancer reported engaging in more dyadic coping immediately after surgery and five months later, both they and their male partners endorsed higher relationship quality and lower depressive symptoms over time (Rottmann et al., 2015). Similarly, coping as a team was related to better adjustment for women with metastatic breast cancer and their partners, whereas mutually avoiding discussion of the illness and each other was related to poorer adjustment (Badr, Carmack, Kashy, Cristofanilli, & Revenson, 2010).

**Intrapersonal Influences**

A number of intrapersonal factors predict adjustment to cancer, with the majority of the research devoted to the roles of personal dispositions, cognitive processes, and coping strategies. First, enduring personal resources such as mastery, optimism, and self-esteem are associated consistently with more positive psychosocial outcomes over time (Helgeson et al., 2004; Henselmans et al., 2010). The relatively stable ability to disengage from untenable goals and engage or re-engage in other meaningful goals also is linked to more favorable adjustment in survivors (Ciere et al., 2017). On the other hand, neuroticism predicts long-term distress (Cook, Salmon, Hayes, Byrne, & Fisher, 2018).

Cognitive appraisals figure prominently in theories of adjustment to chronic illness. Consistent with stress and coping theory as well as theory on strength and vulnerability in adult development, older adults recently diagnosed with colorectal cancer reported lower threat appraisals (i.e., the potential for negative consequences from the experience) than younger adults, which accounted for older adults’ more rapid decline in negative affect (Hart & Charles, 2013). Appraising cancer and its consequences as controllable (Roesch & Weiner, 2001), as well as holding positive expectancies regarding one’s ability to manage the experience (i.e., self-efficacy; e.g., Foster et al., 2016) also predict favorable adjustment.

Broadly, attempts to cope with cancer can be conceptualized as efforts to avoid or actively approach one’s experience (Suls & Fletcher, 1985). Coping through avoidance involves attempts to disengage cognitively, emotionally, and behaviorally from the experience. Approach-oriented coping processes entail engagement in problem-solving, active acceptance, seeking support, emotional expression and processing, and positive reappraisal. Spiritual coping can serve both avoidance- and approach-oriented functions.

Research consistently demonstrates that coping through avoidance of cancer-related thoughts and feelings predicts negative psychological and physical health outcomes (Roesch et al., 2005). Approach-oriented coping is related to adjustment among cancer survivors, albeit less consistently (Roesch et al., 2005). For example, in a sample of women recently diagnosed with breast cancer, coping through cancer-related avoidance was associated with the likelihood of having persistent depressive symptoms and the occurrence of a major depressive episode over a 12-month period. In contrast, high initial engagement in approach-oriented coping, as well as increases in coping through
cancer-related emotional expression and active acceptance, were associated with a greater likelihood of recovery from depression or consistently low symptoms (Stanton, Wiley, Krull, Crespi, & Weihs, 2018). In another study, patients’ increasing use of approach-oriented coping processes mediated the relationship of early provision of palliative care to adults with incurable cancers with improvements in quality of life and depressive symptoms (Greer et al., 2018).

**Multiple Influences on Adjustment in Cancer Survivors**

Tests of conceptual models of contributors to adjustment over time rarely address multiple domains of predictors, although adjustment to cancer clearly is multi-determined. For example, optimism, a personality disposition that entails a generalized expectancy for positive outcomes, appears to influence psychological outcomes through a number of pathways, including bolstering the use of approach-oriented coping strategies and emotional social support, reducing disease-related threat perceptions, and minimizing coping attempts to avoid the stressor (Carver, Scheier, & Segerstrom, 2010). In a test of a comprehensive stress and coping model in prostate cancer patients and spouses, cognitive appraisals (e.g., uncertainty) and coping processes were pathways through which macro-level (e.g., SES), disease-related (e.g., disease stage), interpersonal (e.g., social support), and intrapersonal (e.g., self-efficacy) factors influenced quality of life (Kershaw et al., 2008). Bower (2014) provided an exemplary biopsychosocial review that addresses multiple contributors to cancer-related fatigue. Evaluations of comprehensive models will allow investigators to hone theories of adjustment and sharpen psychosocial interventions.

**Evidence-Based Interventions in Psycho-Oncology**

Health psychologists and researchers in other fields have contributed to the evidence base for a range of interventions, from cancer surveillance to prevention to survivorship. For example, interventions to improve adherence to screening recommendations for early detection of cancer often target structural and organizational barriers, with some success (Wardle et al., 2015). These strategies include improving access to health care and implementing public health campaigns. Effective approaches for adherence to screening for breast, cervical, and colorectal cancer also include providing reminders for screening and one-on-one patient education (Wardle et al., 2015). In that cancer treatments increasingly involve medications taken at home, adherence to those therapies requires continued investigation.

Researchers have tested hundreds of approaches to improve biopsychosocial outcomes in cancer survivors. A first conclusion is that a variety of approaches demonstrate efficacy. These include cognitive behavioral therapy (CBT; Tatrow & Montgomery, 2006); mindfulness-based interventions (Chapter 37); collaborative or coordinated care (Gorin et al., 2017; Li et al., 2017), and couple-based interventions (Badr & Krebs, 2013). Some evidence supports the cost-effectiveness of psychosocial interventions for cancer survivors, and particularly CBT, although cost-effectiveness is rarely studied (Dieng, Cust, Kasparian, Mann, & Morton, 2016).

A second conclusion is that psychosocial interventions have greater efficacy for those survivors in most need, as indicated by their poorer standing on the outcome of interest or shortage of psychosocial resources (Faller et al., 2013). Third, researchers have interrogated only a small fraction of behavioral or psychosocial interventions to understand how they work (Moyer et al., 2012; Stanton, Luecken, MacKinnon, & Thompson, 2013). A review of the literature suggested promising pathways for effective intervention: 1) altered cognitions; 2) self-efficacy for using skills taught in the intervention; 3) protective psychosocial resources (e.g., self-esteem); and cancer-related psychological and physical symptoms (Stanton et al., 2013). Fourth, dissemination (i.e., distribution of knowledge and intervention materials to community practice) and implementation (i.e., integration of research findings into policy and practice) of effective interventions require much more attention. Evidence is
acquiring for approaches that can be widely disseminated, such as electronic health (ehealth) interventions for fatigued cancer survivors (Seiler, Klaas, Tröster, & Fagundes, 2017).

**Conclusion**

This chapter highlights advances in understanding and influencing the contributors to and consequences of cancer, although it only touches the surface of 40 years of research. As suggested throughout the chapter, much remains to be accomplished. A sizeable proportion of the research regards contributors and consequences among women with breast cancer. In that breast cancer is the most frequently diagnosed cancer in the United States and the second in incidence globally, this attention is understandable. Increasingly, however, researchers in health psychology are addressing issues regarding cancers of poorer prognosis and lower incidence. Concentrated research is needed with members of underserved and understudied groups.

Investigating the complex interplay of environmental, social, medical, and intrapersonal factors that influence cancer-related behaviors, decision making, and adjustment, as well as their mechanisms of influence, will continue to move the field forward and illuminate important targets for intervention. Team science can provide the vehicle for interrogating multifaceted phenomena in cancer prevention, early detection, and management of disease- and treatment-related sequelae. Translation of those findings toward the goal of effective and accessible approaches to reduce the burden of cancer and its consequences is vitally important.

**References**


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