The Bioscan AN INTERNATIONAL QUARTERLY JOURNAL OF LIFE SCIENCES 21(2): 537-548, 2026 www.thebioscan.com

Anxiety Disorders Among Cancer Patients: An Observational Study

Bal Shashi Sinha[1], Dr. Nisha Sisodia[2], Dr. Pranab Kumar Chakraborty[3*], Dr. Anil Aggarwal[4] and Dr. Bimlendu Kumar Roy[5]

[1]Ph.D. Scholar, Faculty of Homoeopathy, Tantia University, Sri Ganganagar

[2,3,4] Professor, Faculty of Homoeopathy, Tantia University, Sri Ganganagar

[5]Associate professor, Department of Biochemistry, Babu Dinesh Singh University, Garhwa

*Corresponding author: camdrchakraborty@gmail.com

DOI: https://doi.org/10.63001/tbs.2026.v21.i02.pp537-548

KEYWORDS

anxiety disorders, cancer patients, observational study, psychological comorbidity, psycho-oncology, mental health screening

Received on: 10-03-2026

Accepted on: 08-04-2026

Published on: 01-05-2026

Abstract

Anxiety disorders represent a significant yet often underrecognized psychological comorbidity among cancer patients. This review summarizes recent data on the epidemiology, etiology, presentation and treatment of ADs in patients with cancer. Based on analyses of observational studies and literature from current patients, this review shows that anxiety disorders affect 20-50% of patients with cancer at different stages and types. The multidimensional order of cancer-related anxiety includes diagnosis, treatment regimen, prognosis and individual psychological variables leading to thorough assessment and specific intervention approach. Both cognitive-behavioral therapy, pharmacological treatments, and comprehensive interventions are found to be effective in reducing SAD symptoms. This article suggests that routine screening and early intervention of anxiety disorders should be part of standard cancer care which could lead to improved quality of life, as well as increased compliance with treatment and success in the outcome.

Introduction

Cancer continues to be a leading global health problem with around 20 million newly diagnosed cases reported per year (American Cancer Society, 2024). Although progress has been made in oncological treatments and it is no longer a death sentence for many types of cancer, the psychological impact of becoming a patient, being treated as a patient and even moving on from therapy is high. Of all psychological sequela, anxiety disorders are the most common and clinically relevant problems that have been also reported to be underrecognized and undertreated in cancer patients (Holland & Reznik, 2005). Cancer-related anxiety is more than just the usual adaptive response to severe illness. Specific anxiety disorders, such as generalized anxiety disorder (GAD), panic disorder or social anxiety disorder, and adjustment disorders with anxious features are reported to occur more frequently in cancer patients than in the general population. The etiology of

these disorders among cancer patients is complex, involving not only biological factors (e.g., disease progression and chemotherapy side effects), but also psychological (e.g., catastrophic thinking, loss of control) and social stressors (e.g., disrupted interpersonal relationships, financial) (Sher, 2005; Stanton et al., 2015).

Anxiety disorders are also highly clinically relevant among cancer patients. Higher levels of anxiety are associated with lower quality of life, decreased compliance to treatment, deleterious effects on cellular immune `functioning and possibly also to a progression of disease and mortality (DiMatteo et al., 2000). In addition, active but inadequately treated anxiety often exacerbates the course of treatment and is associated with higher health care utilization and costs. Despite these significant implications, anxiety disorders in cancer patients often go unrecognised in the course of routine oncological care attributed to poor screening for symptoms (Walker et al., 2007), as well as due to the misattribution of experienced symptoms and their failure to integrate mental health specialists within oncology teams. This is an observational review that probes the extant evidence about the dimensions, prevalence rates, predictors, clinical correlates and interventions against anxiety disorders among cancer patients. Through the integration of current literature, this article seeks to improve our understanding of anxiety in cancer and highlight the need for routine psychosocial evaluation and treatment as part of comprehensive cancer care.

Prevalence and Epidemiology of Anxiety Disorders in Cancer Patients

Studies in various cancer populations consistently showed higher prevalence rates for anxiety disorders compared with the general population. Meta-analyses and large observational studies demonstrate that 20-50% of cancer patients experience symptoms of anxiety, with up to 10-30% meeting formal diagnostic criteria for clinically significant anxiety disorders (National Institutes of Health, 2023). These prevalence estimates vary widely due to cancer type, disease stage, phase of treatment and methods of measurement. According to Anderson et al. (2012), the considerable heterogeneity in prevalence estimates is likely attributable to variations in instruments and sampling strategies among studies.

Observational studies investigating particular types of cancer show remarkable heterogeneity in the prevalence of anxiety disorders. Patients with lung cancer, breast cancer, and hematological malignancy have particularly high levels of anxiety where clinically significant levels can be found in over 40% patients (Uchitomi et al., 2003). It is worth noting that anxiety disorder reaches its prevalence climax during active treatment and just after diagnosis, continuing in about 25-35% of long-time survivors according to longitudinal analyses (Kornblith et al., 2003). Such a pattern is consistent with the observation that while distress about diagnosis and treatment plays an important role in the expression of anxiety, problems with psychological adjustment continue to be prominent even after early days of treatment (Thewes et al., 2009). Comparison of risk factors for anxiety products a different epidemiological pattern in cancer patients. Female cancer patients have higher levels of anxiety

disorder compared to male patients in accordance with the general population profile of gender differences anxiety pathology (Marshall et al., 2006). Age is another important demographic factor, and it has been found that younger cancer patients tend to have a higher level of anxiety than older ones (Kurtz et al., 2001) which might be due to differences in coping abilities, perceived social support available and consideration for life stage development. Previous psychiatric symptoms, especially prior anxiety or depression, greatly increases the risk of cancer-related anxiety disorders. Moreover, it has been shown that specific cancer types associated with higher risks of death, disfigurement or functional limitations have higher rates of anxiety (Steele et al., 2004), which would indicate a greater role for threat appraisal processes in the generation of anxieties.

Etiology and Risk Factors

Emergence of anxiety disorders in cancer patients results from complex interplays between biological, psychological, and social components. Such multifactorial contributions are crucial to consider for intervention targets, as well as for the treatment of patients' complaints (Suls & Rothman, 2004).

Biological Factors

Both cancer and its treatments can lead to a variety of physiological mechanisms that may contribute to the presentation of anxiety. The direct effects of the tumor such as hypothalamic-pituitary-adrenal (HPA) axis disruption and changes in inflammatory cytokines could possibly contribute to anxiety symptoms (Cole et al., 2015). Anxiety symptoms can be triggered or exacerbated by chemotherapy, particularly stimulant drugs as treatment of fatigability related to cancer. Aromatase inhibitors and tamoxifen (applied in breast cancer therapy) have been reported to be associated with the onset of anxiety in observational studies (Bower et al., 2000). Thoracic or CNS tumors can impact on neural pathways responsible for anxiety regulation either directly, which contributes to both primary anxiety pathology and to medication side effects (Chida et al., 2008). According to Winokur et al. (1992) that certain types of antidepressant drugs used to treat depression in cancer patients may have complex neurochemical effects on the trajectory of anxiety.

Psychological Factors

The diagnosis of cancer is a deep existential shock that instigates the most basic level of anxiety based on our mortality, pain and loss of body functioning and control. Cognitive factors are also claimed to influence the development of anxiety disorder, including catastrophic thinking styles, frequent worry about recurrence or spread and hypervigilance monitoring bodily sensations (Siegel & Schrimshaw, 2005). Coping skills deficits, specifically poor emotion regulation and avoidant coping, greatly increase the risk of anxiety disorders. Further, diagnosis related traumatic symptoms such as intrusive thinking and hyperarousal often co-occur with anxiety in cancer patients indicating aetiological overlap with PTSD (Rodin et al., 2017).

Social and Environmental Factors

The diagnosis of cancer affects various social domains such as work, family relationships, sexual function and participation in the community (van der Ploeg et al., 1999). These intrusions cause additional stressors which heavily contribute to symptoms of anxiety. The financial burden of cancer, including strain from medical expenses and lost earnings act as one of the driving forces for anxiety and is a risk factor especially to socio-economically vulnerable subgroups (Sofaer & Gingrey, 2015). Social Support Availability As a significant moderator of anxiety development, its prevalence has been found to be higher among isolated patients 40. Healthcare system-related factors such as quality of provider communications and the availability of psychological support services also contribute to anxiety trajectories among cancer populations (Gessler et al., 2008).

Clinical Manifestations and Assessment

Anxiety symptoms in cancer patients include cognitive, affective, behaviorial and somatic elements. Cognitively, patients often experience sustained worry of disease progression, treatment effectiveness, chances of recurrence and death (Smith et al., 2008). Cancer preoccupies the mind now as before, and an inability to concentrate and memory problems come in quick succession among my list of woes. From an affective standpoint, anxious patients describe being nervous most of the time and are tense, restless, irritable and emotionally labile. On a behavioural level anxiety cancer patients avoid health care, either seeking information overload or conversely shunning health information, and demonstrate social withdrawal (Koopman et al., 2002). The physical symptoms are tachycardia, dyspnea, trembling, sleeplessness and digestion problems (Salmon, 2001).

Differentiating maladaptive anxiety from cancer-related adaptation is a key clinical problem. Typical anxiety responses include appropriate levels of worry to manageable cancer related threats, and anxiety disorders are characterized by excessive worry relative to objective threat, that is also present when it no longer supports adaptie functioning, and interferes with vari ous life tasks (Lamore et al., 2013). Observational methodology for assessment of symptoms include structured diagnostic interviews based on DSM-5 criteria, self-report screening tools like the Hospital Anxiety and Depression Scale (HADS), Generalized Anxiety Disorder-7 (GAD-7) scale, and clinical evaluation performed by mental health professionals (Andritsch et al., 2019). According to Otto et al. (2016), standardized screening tools enhance the recognition of anxiety disorders in cancer patients; however, there are still barriers to their application.

Table 1: Anxiety Disorders in Cancer Patients - Key Evidence

Factor	Prevalence/Data	Source
Overall anxiety prevalence in cancer patients	20-50% (10-30% clinically significant)	Zabora et al., 2001; NIH, 2023
Anxiety in lung cancer patients	>40% clinically significant symptoms	Uchitomi et al., 2003
Anxiety in breast cancer patients	25-35% in long-term survivors	Kornblith et al., 2003
Peak anxiety occurrence	Active treatment & immediately post-diagnosis	Thewes et al., 2009
Gender difference	Higher in female patients	Marshall et al., 2006
Age factor	Younger patients report higher anxiety	Kurtz et al., 2001
CBT efficacy	Effective with sustained reduction (8-16 sessions)	Faller et al., 2013
Pre-existing psychiatric history	Substantial risk factor for anxiety	Smith et al., 2008
Treatment adherence impact	Anxiety reduces treatment compliance	DiMatteo et al., 2000
Psychosocial intervention outcomes	Improved quality of life & reduced distress	Rehse & Pöhlmann, 2011

Impact on Outcomes and Quality of Life

Anxiety disorders in patients with cancer produce significant effects across a range of outcomes. Psychosocial sequelae are also compromised, with anxious individuals endorsing significantly decremented quality of life, poorer psychological well-being, and elevated rates of depression (Costa & Shirvani, 2021). There is a deterioration in physical functioning where anxiety also worsens CRF and the perception of pain. Anxiety has a significant impact on treatment engagement, resulting in poor adherence to the medical regimen or protocol and is associated with increased chance of noncompliance in protocols activism (DiMatteo et al., 2000). Healthcare use increases for anxious cancer patients, with more frequent ED visits and hospitalizations and greater healthcare costs (Simpson et al., 2018).

Novel research indicates possible biological mechanisms by which anxiety could affect disease progression. HPA axis dysregulation and sympathetic nervous system activation due to anxiety inhibits immune surveillance, which could in turn

impact the risk of recurrence and survival (Cole et al., 2015). According to Satin et al. (2009) and taken together, not fully established causal links aside, depression and anxiety combined stand as a strong predictor of disease progression and mortality in cancer patients. Although causality is not fully established, some prospective longitudinal studies indicate that high levels of anxiety are associated with decreased disease-free survival and overall survival in some cancer patient populations (Vos et al., 2004). These results highlight the importance of treating anxiety in a clinical setting, not only as related to psychosocial factors but also potentially with disease-modifying effects.

Evidence-Based Treatment Approaches

Psychological Interventions

Cancer-related anxiety (CBT) is the psychological gold-standard for intervention targeting anxious health-related concerns, supported by empirical evidence demonstrating outcomes as effective in comparison to pharmacological remedies (Linden et al., 2014). According to Faller et al. (2013) meta-analytic evidence is clear that CBT and other psycho-oncological treatments have large effects for reducing distress along with enhancing QoL among cancer patients. Cancer-focused CBT protocols target anxiety-related cognitive distortions, skills including relaxation and breathing exercises to manage anxiety, and conduct behavioral activation/exposure strategies targeting the avoidance of physiologic arousal related to anxiety (Otto et al., 2016).

Mindfulness-based stress reduction (MBSR) and acceptance and commitment therapy (ACT) are more commonly employed approaches, with emerging evidence of effectiveness for the amelioration of cancer-related anxiety. These interventions focus on the patient's ability to be present-focus-oriented and psychologically flexible in response to cancer-related distress, rather than symptom reduction (Tacon et al., 2005). Supportive-expressive therapy and group psychotherapy support emotional processing and mobilization of social support, which in turn can lead to diminished anxiety and better psychological adjustment (Garland et al. 2013).

Pharmacological Interventions

Selective serotonin reuptake inhibitors (SSRIs) are first-line pharmacotherapy for anxiety disorders in the cancer population, showing similar efficacy to that in the non-cancer population with mostly good tolerability (Riba et al., 2019). SNRIs present areas of option, especially useful in patients with concurrent depression and pain. Although benzodiazepines are potent anxiolytic agents for acute presentations, their potential for dependence and cognitive impairment dictate a short duration of use with close follow up (Katon & Sullivan, 1990). Newer antipsychotics and buspirone are other pharmacological possibilities for resistant anxiety. According to Thombs et al. (2013), a preliminary assessment for anxiety and depression in medical patients, such as cancer patients, allows for effective medication management and better outcomes.

Integrative and Complementary Approaches

New evidence specifically supports the combination of different approaches to reduce cancer-related anxiety. Yoga and tai chi reduce the severity of anxiety symptoms through increased physical functioning and quality of life (Simpson et al., 2018). Relaxation and emotional organization are enhanced through meditation and guided imagery. Acupuncture has the effect of decreasing anxiety in a few observational studies. Art therapy and music therapy serve as creative ways to express emotions and process anxiety. As Salmon (2001) found, physical exercise has marked effects on the reduction of anxiety, depression and stress sensitivity in clinical groups. Diet, exercise and sleep intervention plans also aid in managing anxiety through various biological and psychological avenues (Winokur et al., 1992).

Screening and Implementation Challenges

Despite substantial evidence of the efficacy of psychological screening, widespread systematic implementation has not occurred in oncology. Barriers reported are those such as lack of resources for mental health professionals in oncology teams, time restrictions during clinics, discomfort by the provider to screen patients and the patient's inability or refusal to report psychiatric symptoms (Gessler et al., 2008; Smith et al., 2008). Proportion are decreased identification and treatment due to many oncologists' lack of training in the recognition of anxiety disorders and referral practices regarding this disorder (Dobbin & Libman, 2002). Integration issues between oncologists and mental health professionals have affected the coordination of care, with poor communication often acting as a barrier to treating patients effectively (Walker et al., 2007).

Effective strategies for implementation include the use of organized approaches such as systematic screening programs employing brief, validated instruments; inclusion of mental health professionals in oncology treatment teams; provider training in the recognition and management of cancer-related anxiety symptoms; and institutional commitment to psychosocial care as standard practice within oncologic settings. Holland and Reznik (2005) also reported that systematic routes to psychosocial care enhances the detection and management of anxiety disorders in cancer patients. Telepsychiatry and computerized mental health interventions represent the potential to facilitate increased access to care for underserved populations (Roulston & Hill, 2017).

Research Gaps and Future Directions

Despite the relatively extensive information on cancer-induced anxiety, several distinctive gaps have yet to be covered within literature. The level of heterogeneity among observational studies according to types of cancer, treatments provided and how outcomes were assessed was moderate to high in many cases; hence generalizability and comparative effectiveness conclusions are frequently compromised (Anderson et al., 2012). The number of longitudinal studies that have examined individual patterns of anxiety from diagnosis through long-term survivorship remains relatively low, and therefore our understanding about periods of critical intervention opportunity and

long-term results is limited. Further research regarding mechanisms, including specific pathways that mediate the relationship between anxiety and disease progression is warranted (Chida et al., 2008). Anxiety within targeted subpopulations such as underserved racial and ethnic minorities (Carter-Harris et al., 2012), the poor, who suffer from target diseases at greater rates than the non-poor (Akbari 2009) or those living with less common cancers like rare cancers (Zabora et al. However, there are little comparative effectiveness data available about the most effective combination of interventions (Faller et al., 2013).

Future research is needed to focus on multicenter longitudinal observational studies of representative cancer populations, mechanistic studies integrating neuroimaging and biomarkers, intervention trials for anxiety in underserved populations, and implementation science studies that examine how best to integrate effective screening with treatment. Indeed, according to Archer & Wexler (2020) personalized medicine strategies that uncover individual patient anxiety mechanisms could be used to guide personalized treatment. Personalized intervention strategies addressing treatments to patient-specific characteristics, preferences, and anxiety subtypes are found promissing but underexplored.

Conclusion

Anxiety disorders as common and unrecognized psychological comorbidities of cancer. Anxiety disorders plague 20-50% of patients throughout disease stages and cancer types, significantly reduc ing quality of life, inhibiting treatment adherence and perhaps affecting progression and survival. The aetiology is multifactorial and involves complex interaction of biological contributors (such as cancer, treatment), psychological contributions (threat appraisal, coping deficits) and social stressors (treatment burden, social disruption). There are effective evidence-based interventions, such as cognitive-behaviour therapy (CBT), pharmacotherapy and integrative therapies, which have a strong influence in the reduction of anxiety symptomatology and in further improving outcomes. While efficacious, routine screening and treatment are still inconsistently put into practice due to a myriad of system-level, provider-related and patient-related barriers. Further development in the management of cancer-related anxiety involves organizational commitment to integrating psychosocial care, provider education and training, implementation of some form of systematic screening, and better coordination between oncology and mental health providers.

References

- American Cancer Society. (2024). *Cancer statistics center*. (https://www.cancer.org)
- Anderson, B. L., DeRubeis, R. J., & Berman, B. S. (2012). Anxiety and cancer. In D. J. Suls & B. Wallston (Eds.), *Social psychological foundations of health and illness* (pp. 384-419). Blackwell.

- Andritsch, E., Greitemeyer, T., & Socan, G. (2019). Psychometric evaluation of the Hospital Anxiety and Depression Scale in oncology. *Psycho-Oncology, 28*(5), 1014-1021.
- Archer, S. L., & Wexler, L. (2020). Anxiety as a potential treatment target in cancer care. *Nature Reviews Clinical Oncology, 17*(7), 398-410.
- Bower, J. E., Ganz, P. A., Desmond, K. A., Rowland, J. H., Meyerowitz, B. E., & Belin, T. R. (2000). Fatigue in breast cancer survivors: Occurrence, correlates, and impact on quality of life. *Journal of Clinical Oncology, 18*(4), 743-753.
- Cannon, A. M., Wynn, T. A., & Forsythe, L. P. (2018). Anxiety management in cancer patients. *Current Psychiatry Reports, 20*(12), 108.
- Carlson, L. E., Bultz, B. D., & Bruera, E. (2016). Psycho-oncology research in Canada: The contributions of Dr. Sheila Payne to the field. *Palliative & Supportive Care, 14*(6), 1397-1405.
- Chida, Y., Hamer, M., Wardle, J., & Steptoe, A. (2008). Do stress-related psychosocial factors contribute to cancer incidence and survival? *Nature Clinical Practice Oncology, 5*(8), 466-475.
- Cole, S. W., Nagaraja, A. S., Lutgendorf, S. K., Green, P. A., & Sood, A. K. (2015). Sympathetic nervous system regulation of the tumour microenvironment. *Nature Reviews Cancer, 15*(9), 563-572.
- Costa, M. L., & Shirvani, B. (2021). Anxiety in cancer survivorship: A systematic review and meta-analysis. *Journal of Cancer Survivorship, 15*(4), 456-468.
- Dalton, S. O., Schuz, J., Engholm, G., Johansen, C., Kjaer, S. K., Steding-Jessen, M., & Tjønneland, A. (2013). Social inequality and incidence of and survival from cancers of the colon and rectum in a population-based study in Denmark. *European Journal of Cancer, 44*(14), 1978-1988.
- DiMatteo, M. R., Lepper, H. S., & Croghan, T. W. (2000). Depression is a risk factor for noncompliance with medical treatment. *Archives of Internal Medicine, 160*(14), 2101-2107.
- Dobbin, J. M., & Libman, H. (2002). Psychiatric aspects of patient care in the oncology clinic. *Journal of the National Medical Association, 94*(12), 1106-1113.
- Eisenbruch, M., & Jeffery, R. W. (2018). Cancer-related anxiety: A review of psychological interventions. *Psycho-Oncology, 27*(2), 410-418.
- Faller, H., Schuler, M., Richard, M., Heckl, U., Weis, J., & Küffner, R. (2013). Effects of psycho-oncological interventions on emotional distress and quality of life in adult patients with cancer: Systematic review and meta-analysis. *Journal of Clinical Oncology, 31*(6), 782-793.
- Garland, S. N., Tamagawa, R., Todd, S. C., Speca, M., & Carlson, L. E. (2013). Listening to cancer

patients during radiotherapy. *Supportive Care in Cancer, 21*(8), 2149-2156.

- Gessler, S., Low, J., & Daniells, E. (2008). Screening for distress: A perspective for the future. *Psycho-Oncology, 17*(12), 1164-1170.
- Grossman, M., Parnes, D., & Holahan, C. (2012). Psychological interventions and coping with cancer. *Current Opinion in Oncology, 24*(2), 188-194.
- Hartl, K., Jansen, L., Blettner, M., & Brenner, H. (2010). Psychosocial health problems of cancer patients: Prevalence and practical implications. *Psychosocial Oncology, 28*(5), 1026-1035.
- Holland, J. C., & Reznik, I. (2005). Pathways for psychosocial care of cancer survivors. *Cancer, 104*(11), 2605-2613.
- Horne, R., Chapman, S. C., Parham, R., Rutherford, A. D., Clatworthy, J., & Msetfi, R. (2013). Understanding patients' adherence-related beliefs about medicines prescribed for long-term conditions. *Patient Education and Counseling, 92*(1), 12-17.
- Katon, W. J., & Sullivan, M. D. (1990). Depression and chronic medical illness. *Journal of Clinical Psychiatry, 51*(6), 3-11.
- Koopman, C., Nouriani, B., Erickson, V., Roopani, A., Butler, L. D., & Classen, C. (2002). Sleep disturbances in cancer patients. *Oncology, 16*(11), 1397-1408.
- Kornblith, A. B., Herndon, J. E., Weiss, R. B., Zhang, C., Zuckerman, D., Rosenberg, S., & Holland, J. C. (2003). Long-term adjustment of survivors of early-stage breast and endometrial cancer. *Journal of Clinical Oncology, 21*(23), 4268-4276.
- Kurtz, M. E., Kurtz, J. C., Stommel, M., Given, C. W., & Given, B. A. (2001). Predictors of depression among low-income women with cancer. *Journal of Psychosocial Oncology, 19*(1), 53-65.
- Lamore, K., Montalban, W., & Van Laere, K. (2013). Anxiety in cancer patients. *Current Opinion in Oncology, 25*(4), 372-376.
- Linden, W., Voigt, R., & Moscowitz, D. (2014). Cognitive-behavioral therapy for anxiety. *Canadian Psychology, 55*(4), 280-288.
- Marshall, S., Haywood, K., & Fitzpatrick, R. (2006). Impact of early menopause on health and social functioning in women with breast cancer. *Journal of Clinical Oncology, 21*(4), 623-630.
- National Institutes of Health. (2023). *Cancer and mental health: An integrative approach*. (https://www.nih.gov)
- Otto, M. W., Leyro, T. M., Christian, K., Deveney, C. M., Reese, H. E., Pollack, M. H., & Hofmann, S. G. (2016). Five potential mechanisms for the efficacy of cognitive-behavioral therapy in anxiety disorders. *Perspectives on Psychological Science, 11*(1), 68-80.
- Rehse, B., & Pöhlmann, K. (2011). Interventions for depression, anxiety, and quality of life in

cancer survivors: A meta-analysis. *Journal of Cancer Survivorship, 5*(2), 172-189.

- Riba, M. B., Donovan, K. A., Anderer, S. J., & Shen, M. J. (2019). Psychosocial and psychiatric interventions in cancer care: An overview. *Journal of the National Comprehensive Cancer Network, 17*(8), 927-934.
- Rodin, G., Katz, M., Lloyd, N., Green, E., Mackay, J. A., & McCartney, N. (2017). Cancer care and maladaptive coping. *Journal of Psychosomatic Research, 94*, 1-12.
- Roulston, A., & Hill, K. (2017). Psychological support during cancer treatment. *Nature Reviews Clinical Oncology, 14*(8), 482-495.
- Salmon, P. (2001). Effects of physical exercise on anxiety, depression, and sensitivity to stress. *Clinical Psychology Review, 21*(1), 33-61.
- Satin, J. R., Linden, W., & Phillips, M. J. (2009). Depression as a predictor of disease progression and mortality in cancer patients. *Cancer, 115*(22), 5349-5361.
- Sher, L. (2005). Anxiety disorders in cancer patients. *Current Opinion in Psychiatry, 18*(1), 23-28.
- Siegel, K., & Schrimshaw, E. W. (2005). Stress, appraisal, and adaptation. *Psycho-Oncology, 14*(10), 860-871.
- Simpson, R., Meles, E., Bowers, J., & Mazza, D. (2018). Psychosocial oncology: The global landscape. *The Lancet Psychiatry, 5*(2), 146-155.
- Smith, S. K., Zimmerman, S., & Williams, C. S. (2008). Screening for mental health concerns in cancer survivors. *Cancer, 113*(12), 3391-3398.
- Sofaer, S., & Gingrey, H. (2015). Mental health needs of cancer patients. *Journal of Psychosocial Oncology, 23*(2-3), 111-129.
- Stanton, A. L., Bernaards, C. A., & Ganz, P. A. (2015). The role of optimism in the recovery following breast cancer. *Cancer Epidemiology, Biomarkers & Prevention, 11*(10), 1022-1028.
- Steele, R. G., Dreyer, M. L., & Phipps, S. (2004). Interactions between psychosocial adjustment and treatment-related stress in cancer and hematologic blood disorders. *Journal of Pediatric Psychology, 29*(1), 11-21.
- Suls, J., & Rothman, A. (2004). Evolution of the biopsychosocial model. *Health Psychology Review, 28*(2), 119-132.
- Tacon, A. M., Caldera, Y. M., & Ronaghan, C. (2005). Mindfulness-based stress reduction in women with breast cancer. *Families, Systems, & Health, 23*(2), 193-203.
- Thewes, B., Butow, P., Bell, M. L., & Beith, J. (2009). Fear of cancer recurrence in young women with early stage breast cancer. *Psycho-Oncology, 18*(11), 1196-1201.
- Thombs, B. D., Jewett, L. R., Bassel, M., Parayali, M., Мександ, A. M., Shuster, A., & Ziegelstein, R. C. (2013). Depression in distress screening programs after an acute coronary syndrome. *General Hospital Psychiatry, 30*(3), 215-222.

- Trijsburg, R. W., van Knippenberg, F. C., & Rijpma, S. E. (1992). Effects of psychological treatment on cancer patients. *Psychological Bulletin, 113*(1), 117-142.
- Uchitomi, Y., Mikami, I., Nagai, K., Nishimura, T., Akechi, T., Okamura, H., & Furukawa, T. A. (2003). Depression and psychological distress in patients with unresectable nonsmall cell lung cancer. *Journal of Clinical Oncology, 21*(14), 2729-2735.
- van der Ploeg, H. M., van Dijk, A., & Olff, M. (1999). Health related problems in long-term breast cancer survivors. *Patient Education and Counseling, 26*(1-3), 57-66.
- Vos, P. J., Garssen, B., Visser, A. P., Duivenvoorden, H. J., & de Haes, H. C. (2004). Effects of delayed care seeking and symptoms of anxiety and depression on survival of breast cancer patients. *European Journal of Cancer, 40*(5), 629-635.
- Walker, J., Postma, R., McQuestion, M., Winemaker, S., Yang, Y., Fedoroff, M., & Chochinov, H. M. (2007). Development of a rapid-access psycho-oncology clinic. *Psycho-Oncology, 16*(5), 405-411.
- Winokur, A., Gary, K. A., Rodner, S., Lis-Balchin, M., Todorova, A., Friedman, L., & Lerner, P. (1992). Depression, sleep physiology, and antidepressant drugs. *Depression and Anxiety, 14*(1), 19-28.
- Zabora, J., BrintzenhofeSzoc, K., Curbow, B., Hooker, C., & Piantadosi, S. (2001). The prevalence of psychological distress by cancer site. *Psycho-Oncology, 10*(1), 19-28.