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COGNITIVE AND BEHAVIORAL INTERVENTIONS

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Abstract

Cognitive and behavioral interventions are effective in treating mood and anxiety disorders in patients with cancer. Screening for disorders is more common but referral (and uptake) of psychosocial services remains low relative to patient need. Efficacious, cognitive behavioral treatments (CBTs) are first line treatments for adults with major depressive disorder (MDD) and generalized anxiety disorder (GAD), and there is accumulating evidence for CBT effectiveness for individuals with cancer. For those not yet diagnosed but with elevated symptoms, CBT has reduced symptoms and shown physical symptom and health-related quality of life improvements. Fewer studies have accrued patients diagnosed with MDD or GAD, but those studies also show CBT to be similarly effective. Thus far, CBT trials with MDD/GAD comorbidity, a common occurrence and negative prognostic factor, have not been conducted. CBT replication and extension trials are needed to confirm CBT as the treatment of choice for patients with psychiatric disorders.

Keywords: cancer, cognitive behavioral therapy, CBT, depression, major depressive disorder, anxiety, generalized anxiety disorder, screening, interventions

COGNITIVE AND BEHAVIORAL INTERVENTIONS

A diagnosis of cancer can be devastating. Patients may be overwhelmed with the immediate necessities of choosing physicians, making treatment decisions, coping with side effects of treatment, navigating insurance coverage and finances, and managing any disruption to close others. Added to this burden may be psychopathology, with data suggesting a prevalence of mood or anxiety disorders exceeding 20%.¹ These patients, underserved by the psychological/psychiatric and oncology communities, are the focus of this chapter. Reviewed are studies testing the effectiveness of cognitive behavioral therapy (CBT) and CBT components for individuals with high symptom levels or psychiatric disorders.

The Burden of Untreated Psychopathology

Among the general population, mood and anxiety disorders are common, disabling, and unremitting, with lifetime national prevalence estimates of 21% and 31%, respectively.² Over 16% of people will be diagnosed with major depressive disorder (MDD) in their lifetime, with 6.6% meeting criteria for depression within a 12-month period.³ Of anxiety disorders, generalized anxiety disorder (GAD) is one of the most common. Lifetime prevalence estimates of GAD range from 4% to 7%, with 12-month estimates ranging from 3% to 5%. MDD and GAD are associated with substantial functional impairment.^{2,4} A psychopathology diagnosis is usually made more difficult by the commonality of comorbidity. Of those with MDD, it is likely that within 12 months, 58% will also meet criteria for an anxiety disorder.³ Of the comorbidities, MDD/GAD is the most common, perhaps due to shared genetic risk.⁵ Finally, both GAD and MDD are more common for women than men; depression, in fact, is the leading cause of disease-related disability among women.⁶

In recent years, the study of psychopathology among patients with cancer has grown, but when compared to our knowledge of psychopathology among those with other chronic illnesses (e.g., coronary heart disease),⁷ the dearth of information remains. The World Health Organization World Mental Health survey shows *twelve-month* prevalence estimates for adults in the United States to be 9.7% for mood disorders and 19.0% for anxiety disorders.² By analogy, these estimates provide a lower bound on the percentage of individuals with psychiatric histories at the time of diagnosis. Point prevalence estimates obtained from samples at various times in the cancer trajectory ranged from 11.2%-38.2% for any mood disorder, 7.4%-36.6% for all types of depression, 6.2%-49.8% for anxiety disorders, and 19.4%-21.5% for any adjustment disorder.⁸⁻¹⁰ Stark et al.¹¹ found 38% of patients with an anxiety disorder to also have MDD, and those with comorbidity are at significant risk for developing psychiatric disorders post diagnosis.¹² Regarding individual differences, some studies suggest higher rates of depression and anxiety for females^{9,13} whereas others do not.¹⁰ Younger age has also been associated with higher rates^{9,13} while social support may be protective.^{9,13}

Identification of Patients with Psychopathology:

Screening and Assessment

Despite mood and anxiety disorder incidence being substantial, patients are infrequently identified.¹⁴ Symptoms meeting criteria may not be recognized or known by the oncology team,¹⁵ may be trivialized as a ‘normal’ reaction, or interpreted as due only to physical symptoms or treatment toxicities.⁷ In a nationally representative sample of more than 1200 adult cancer patients, only 29% reported having had a substantive, specific discussion with their provider about their emotional needs.¹⁶ As many as 73% of cancer patients are not receiving appropriate psychological or psychiatric treatment, with only 5% reporting having seen a mental health

professional¹³ in spite of recommendations from the Institute of Medicine (IOM)¹⁷ and the American College of Surgeons' Commission on Cancer.¹⁸

Patients are aware of their emotional problems and needs but, they want their medical team to ask about difficulties and offer help.¹⁹ Even when identified, though, many patients are untreated, despite their positive views about receiving psychosocial services. For example, among 1538 patients undergoing treatment, Walker and colleagues¹³ found that few were being treated for their psychological disorders: only 24% were receiving anti-depressants and only 5% were receiving psychological therapy. In addition to no relief of symptoms, the absence of treatment brings added sequelae thereafter²⁰—more symptom distress, less meaning in life, less social support, maladaptive coping, and employment absenteeism, among others. Treatment for either anxiety or depression can successfully address issues such as these²¹ and has the potential to reduce the risk of medical comorbidities, recurrence, and cancer death.²²

There are guidelines which specify screening procedures and validated measures to detect depressive and anxiety symptom severity in patients with cancer, with the American Society of Clinical Oncology guidelines being preeminent.²³ The target population for the guideline is adults (age ≥ 18 years). The target audience includes oncologists, psychiatrists, psychologists, primary care providers, nurses and others involved in care delivery. Evidence based, the guideline specifies patients be evaluated for symptoms of depression and anxiety at diagnosis and periodic times thereafter. Care pathways are provided, with selection governed by a patient's level of symptomatology and supplementary information (e.g., personal history of depression or anxiety, family history of depression or anxiety, relationship status, etc.). Patients presenting with moderate to severe depressive or anxiety related symptoms are recommended for diagnosis determination and appropriate treatment *<Table 1 here>*. Other protocols exist, such

as the Cancer Care Ontario Program in Evidence-Based Care (PEBC)²⁴ as well as that of the National Comprehensive Cancer Network (NCCN).²⁵ Regardless of the specific pathway, ASCO, PEBC, and NCCN guidelines recommend the use of psychological and psychosocial interventions that are empirically supported.

Several measures have been recommended for use in assessing depression and anxiety in oncology *<Table 2 here>*. ASCO suggests two measures, one for depression and the other for anxiety. The Patient Health Questionnaire-9 (PHQ-9)²⁶ can accurately identify oncology patients who meet DSM criteria for depression.^{27,28} Similarly, the Generalized Anxiety Disorder 7-item scale (GAD-7)²⁹ detects GAD successfully when compared to diagnosis by structured clinical interview.²⁸ The Hospital Depression and Anxiety Scale (HADS)³⁰ is only fair in detection of psychiatric disorders and may instead provide insight into which patients to refer for further evaluation.³¹ The NCCN Distress Thermometer and Problem Checklist is commonly used to assess general emotional distress. While it has demonstrated concordance with other validated measures of anxiety and depression (e.g., the HADS), it has not been shown to accurately detect mood disorders based on DSM criteria,²⁷ and, in fact, is not recommended as a screening instrument for depression and anxiety.³¹

The American Psychiatric Association has described “emerging measures,” for which further study is needed to establish clinical utility. Two such measures are the PROMIS Emotional Distress Short Forms for the assessment of depression or anxiety.³² Each measure assesses symptoms of depression or anxiety over the last 7 days. A study of more than 3,000 adults found correlations between individuals’ scores on the PHQ-9 and GAD-7 with the 28- and 29-item PROMIS depression and anxiety item banks ($ICCs \geq 0.91$).³³ The PROMIS item banks have been found to be highly correlated with the static short forms.³⁴ Other studies among

chronic illness populations suggest that the PROMIS measures may reliably identify individuals screening positive for anxiety or depression on the PHQ-9 and GAD-7.^{35,36} Presently, the validity of the PROMIS measures to detect clinically meaningful depression and anxiety in oncology patients is unknown.

Efficacious Psychological Treatments for Mood and Anxiety Disorders

Fortunately, efficacious treatments exist.³⁷ Among psychotherapies, the most extensively studied is cognitive behavioral therapy (CBT),^{38,39} an effective treatment for both mood and anxiety disorders.⁴⁰ CBT is more effective than control groups⁴⁰ and has been found to be as effective as anti-depressant medication.⁴¹ Even among the severely depressed, several studies have⁴² found that both treatments produced comparable results (about 58% treatment responders) during the acute phase, but when discontinued, patients treated with CBT were at lower risk for relapse than those treated with medication, for as long as two years. Overall, effect sizes for CBT are large. For short-term post treatment outcomes, median effect sizes have been 0.61 for depressive disorders and 0.69 for anxiety disorders.^{43,44} Effect size estimates for long-term outcomes (12-18 months) are roughly half the magnitude of the short-term effect sizes.⁴³

CBT for depression has three components.⁴⁵ *Behavioral activation* involves efforts to increase patients' engagement in activities and contexts providing pleasure or a sense of accomplishment; behavioral activation is also done to promote cognitive change. Secondly, *correcting negative, automatic thoughts* is a collaborative process when therapist and client work to identify and evaluate depressive thinking accompanying negative moods. Once patients have mastered these and other basic skills (e.g., problem solving, assertive communication), therapists assist clients to *identify and change core beliefs and schema*, which, more generally, underlie a

depressed patient's pervasive, negative beliefs. Research suggests that all three components are important, although some studies show behavioral activation is sufficient.³⁹

The efficacy of CBT for GAD is also strong.⁴⁶ Few RCTs have compared medications to CBT, but of those that have, CBT outperforms medications.⁴⁷ This conclusion is tempered, however, by the limiting factor of benzodiazepines being the primary drug with which CBT has been compared. Yet relative to other treatments/conditions, meta-analytic reviews show CBT for GAD to be superior to wait-list conditions, no treatment control conditions, non-directive therapy, and pill placebo conditions.⁴⁷ Additionally, RCTs have shown that augmenting anxiolytic medications with CBT can produce significant reductions in worry severity.⁴⁸ CBT for GAD clearly produces significant improvements in the acute phase of treatment as it does for MDD, but the strongest findings are from studies showing its long-term effects.⁴⁹ Durham and colleagues⁴⁹ found that patients with GAD who received CBT (compared to those receiving medication, placebo, or analytic psychotherapy) had lower symptom severity and were less likely to have sought additional treatment during the next several years, suggesting enduring effects. Meta-analytic data support this finding, with CBT for GAD producing long-term symptom reduction.⁵⁰

CBT for GAD involves several components. As worry is pathognomonic, patients are first taught to attend to the internal and external cues that precede their worry. Secondly, patients are taught progressive muscle relaxation training and encouraged to use it for preventing and/or reducing daily symptoms. Thirdly, patients are taught cognitive coping skills, as is done in CBT for depression. Patients learn to identify and correct their automatic worries and perception of future threats (rather than correcting negative self-relevant views as is done for depression). To practice their new coping strategies, in-session imagery rehearsal is used and then out-of-session

homework follows. Earlier research suggested that the cognitive elements of treatment were essential for efficacy.⁵¹ More recent RCTs suggest that cognitive therapy, applied relaxation with self-control desensitization, and the combination are similarly efficacious.⁵²

The empirical support for CBT in the treatment of MDD and GAD suggests that it should be similarly effective for patients with cancer with the same disorders. ASCO guidelines advise that all patients with cancer be evaluated for anxiety and depressive symptoms repeatedly throughout care, and that the severity of symptoms inform the most appropriate psychological treatment pathway.²³ Theoretically, the cognitive diathesis implicated in cognitive models of depression⁵³ may be readily activated with the cancer stressor as it is with other stressors. Patients with cancer are thrust into an unfamiliar, complex medical environment and life trajectories are suddenly uncertain. Depressed patients without cancer tend to view their environment as overwhelming, obstacle-laden, and for some, there is hopelessness. Patients with cancer may respond to the diagnostic period with similar judgments,⁵⁴ particularly when depressive symptoms are severe.⁵⁵ Thus, CBT's direct treatment of distorted cognitions, feelings of helplessness, and/or pessimism about the future would be timely and appropriate. Similarly, the magnitude of stress accompanying cancer may be so significant that it may trigger the same core beliefs ("I am worthless, inadequate, unlovable, deficient, and now I am sick"), and CBT directly identifies, challenges, and attempts to change negative self-views.

Similar advantages for CBT would be expected for those diagnosed with GAD. Oftentimes a lifelong disorder,⁵⁶ GAD's symptom of chronic, anxious apprehension might be easily activated with cancer diagnosis. For cancer patients, CBT would identify specific worries and address the typical likelihood of overestimating negative events and/or catastrophizing. Even if the worries of cancer progression are realistic, as might be the case for those with

recurrence or disseminated disease, there remains a need to shift focus from worries to day-to-day events that provide happiness or satisfaction. The relaxation therapy component of CBT for GAD would be particularly helpful for patients with cancer, as it has been shown to be beneficial in other contexts.⁵⁷

Additionally, CBT has been used for cancer-specific physical symptoms with improvements in depression or anxiety symptoms as secondary outcomes. Multiple studies have tested the effectiveness of CBT for insomnia (CBT-I).⁵⁸⁻⁶⁰ Components of CBT-I include cognitive strategies, education and provision of sleep hygiene information, relaxation training, stimulus control, and sleep restriction. Patients have shown improvements in sleep on subjective and objective sleep indices, lower frequency of medicated nights, and better sleep quality. In addition, significant reductions in anxiety and depressive symptoms, as well as improvements in mood have been found. In some studies, the effects on mood were sustained (e.g., 12 months post-treatment).⁵⁸ Other studies have used CBT for fatigue.⁶¹ These treatments can involve cognitive restructuring around the negative beliefs about fatigue and the use of behavioral strategies (e.g., activity scheduling, increased exercise). Patients report improvements in fatigue^{62,63} and secondary outcomes, such as quality of life⁶³ or psychological distress,⁶² with improvements sustained up to 2 years later.⁶⁴

Before review of CBT RCTs for depressive or anxiety disorders, RCTs which accrued unscreened “all-comer” samples or screened patients reporting moderate to severe symptoms on self-report inventories, are described. An early (1986) methodologically strong example is that of Telch and Telch⁶⁵ who screened patients for high distress and compared group CBT to support group and control groups. The 6-week intervention included behavioral activation and ‘constructive thinking’ in addition to relaxation, stress management, assertive communication,

problem solving, and feelings management. The CBT group was most effective, and this is one of the few studies in the literature showing the control group to worsen. Moorey et al.⁶⁶ accrued patients diagnosed with an adjustment disorder and found CBT to significantly reduce depressive and anxiety symptoms compared to supportive counseling. The intervention had 6-8 sessions with the patient and, optionally, the spouse. Cognitive change was achieved through identification of automatic thoughts, as is done in classic CBT for depression. Behavioral activation was also included, along with progressive muscle relaxation, spousal communication strategies, and fostering a ‘fighting spirit.’ Trask and colleagues⁶⁷ examined a 4-session CBT intervention with melanoma patients screened for high distress. The CBT group, compared to the control, showed significant reductions in anxiety symptoms and health-related quality of life, although not distress.

In summary, research suggests CBT is efficacious for patients with higher levels of depressive/anxiety symptoms and the specific problems of insomnia and fatigue. The majority of trials used CBT components rather than full CBT protocols. Still, patients reported symptom reduction compared to controls. More broadly, these RCTs provided empirical support for testing the hypothesis that CBT would be effective with individuals diagnosed with MDD and/or GAD.

CBT for Patients with Anxiety or Mood Disorders

Anxiety Disorders

Greer and colleagues^{68,69} developed a brief CBT protocol tailored for patients (N=40) with advanced cancer [lung ($n=12$), pancreatic ($n=7$), colorectal ($n=6$), other ($n=15$)] and clinically significant symptoms of anxiety based on the Hamilton Anxiety Rating scale (HAM-A).⁷⁰ Patients were randomized to either CBT or waitlist control (WLC). In the 6-7 session intervention,⁶⁸ patients are introduced to 4 modules: 1) psychoeducation and goal setting; 2)

relaxation training; 3) coping with cancer fears; and 4) activity planning and pacing. In modules 1 and 2, patients learn about the symptoms of anxiety in the context of their disease, are provided with an overview of the CBT model, set goals for treatment, and receive instruction in diaphragmatic and pursed-lip breathing, as well as autogenic relaxation. During module 3, patients identify automatic thoughts and worry, differentiating unrealistic worries from realistic worries, and utilizing cognitive restructuring techniques. Finally, in module 4 patients begin planning and engaging in activities despite physical limitations or symptoms. Skills emphasized during this module include planning for fluctuations in functional abilities, activity pacing, and activity scheduling.

As a small sample pilot, this variation of CBT was feasible for patients with advanced cancer, with 80% of patients completing at least 5 sessions. Regarding clinician-rated symptoms of anxiety, patients receiving the CBT experienced a 35% reduction in symptoms whereas the reduction was 11% for the WLC patients. Similarly, the CBT group had greater reductions in self-reported symptoms of anxiety symptoms (Cohen's $d=0.84$) and cancer-specific stress (i.e., intrusive thoughts and avoidant behaviors; Cohen's $d=0.92$) than did the WLC.

Mood Disorders

Savard and colleagues⁷¹ accrued patients with elevated depressive symptoms on the HADS³⁰ depression subscale ($HADS \geq 7$) or the Beck Depression Inventory⁷² ($BDI; \geq 15$). Women with metastatic breast cancer ($N=45$) were randomized to individual CBT or WLC. The CBT protocol was conducted as described by Beck⁴⁵ but modified for patients (e.g., helping patients realize they can have life goals despite having an incurable condition) and had 11 sessions: eight weekly and three booster sessions at 3-week intervals following the end of treatment. The CBT group was found with significant improvements in depressive symptoms on the HRSD and the BDI in

comparison to the WLC. Also, more patients in the CBT group had depression remission (i.e., scores below clinical cut-offs) on the HRSD (87% in CBT vs. 58% in WLC), BDI (80% vs. 25%), and the HADS depression scale (87% vs. 42%).

Qiu and colleagues⁷³ accrued breast cancer patients meeting criteria for MDD using a Hamilton Depression Rating Scale⁷⁴ (HAM-D) score ≥ 17 . Patients (N=62) were randomized to CBT delivered in groups or WLC plus education. CBT groups met weekly for 10, two-hour sessions. Using Beck manual content,⁴⁵ sessions included cognitive restructuring, behavioral activation, and interpersonal communication, with progressive muscle relaxation done each session. The educational booklet for the WLC included facts on breast cancer, treatment-related adverse events, and suggested coping strategies. The CBT group showed a significant reduction in HAM-D mean score (from 11.71 to 7.37) from pre- to post-treatment and a reduction in HAM-D mean score (from 11.71 to 6.31) from pre-treatment to 1-month follow-up compared to the WLC.

Hopko and colleagues⁷⁵ compared two components of CBT: behavioral activation (BA) versus problem-solving therapy (PST). Patients with breast cancer (N=80) and MDD, as determined by the Anxiety Disorders Interview Schedule-IV (ADIS-IV),⁷⁶ participated. The aim of BA was to increase patients' activities in reinforcing circumstances, whereas the aim of PST was to increase patients' use of problem-solving skills and generation of new, positive attitudes. It was hypothesized that BA would result in greater reductions in depressive symptoms and superior maintenance of treatment gains at the 1-year follow up compared to PST. For BA, patients logged daily activities and rated the level of reward or pleasure obtained from each activity. Incorporating their values and goals within many life areas (e.g., family, social, and intimate relationships), patients used the logs to develop an activity hierarchy, with the therapist

aiding them to progress through the activities, with weekly goal-setting and monitoring. PST helped patients gain a sense of control and self-efficacy and to be active in increasing rewards from the environment. An adapted version of the PST of Mynors-Wallis⁷⁷ was used. All patients received eight, 1-hour individual sessions. Although the treatments differed, they overlapped in their attempts to modify behavior to increase rewarding outcomes.

No significant differences were found between groups, with both showing significant reductions in depressive symptoms on the BDI-II, clinician rated depression on the HRSD, somatic anxiety symptoms, quality of life, and social functioning. Analysis of clinical change found 70% of BATD and 81% of PST patients reaching criterion for the BDI-II (≤ 10 on the BDI-II), and 78% and 81% of patients, respectively, reaching the HRSD criterion ($\geq 50\%$ reduction). Also, both treatments significantly decreased suicidal ideation and hopelessness,⁷⁸ effects maintained at the 12-month follow-up. Thus, CBT components of behavioral activation and problem-solving achieved significant clinical change for breast cancer patients with MDD, a conclusion tempered by the absence of a control group.

In an early study, Evans and Connis⁷⁹ accrued patients ($N=78$) screened with Center for Epidemiological Studies Depression Scale (CES-D; ≥ 16) and randomized to group delivered CBT or social support or no treatment control. The 8-week CBT used three components: cognitive restructuring, progressive muscle relaxation, and establishment of supportive relationships. The 8-week social support group discussed topics chosen by the group members, with a leader/moderator present to encourage patients to express feelings and identify shared problems. At post-treatment, both groups had significantly lower depressive symptoms compared to the control group. Treatment groups were equivalent at the 6-month follow-up, but

the social support group had significantly lower depressive symptoms than the control group whereas the CBT group did not.

Nezu and colleagues⁸⁰ compared PST-only, PST with a significant other present (PST-SO), and WLC, accruing patients ($N=150$) screened with the HRSD (score ≥ 14). PST, originally developed for depression, was revised. Ten weekly sessions aimed for patients' mastery of PST skills: 1) problem definition, 2) generating multiple solutions, 3) evaluating solutions and choosing one to implement, and 4) evaluating the solution's outcome. Cognitive restructuring was also used to help patients modify any dysfunctional cognitions interfering with problem solving. For the PST-SO group, the agenda was the same, with the exception that the SO was to be a "problem-solving coach" to support the patient's problem-solving. At post-treatment, both PST and PST-SO groups had significant gains across depression, distress, and quality of life outcomes, compared to the WLC. Clinically meaningful change was defined as patients having a post-treatment score 2 standard deviations beyond that found for the WLC group. Using this metric, 91% of the PST and 90% of the PST-SO patients achieved significant change and were maintained at the 12-month follow-up. The results provide strong evidence that inclusion of a SO is not necessary to achieve patient MDD remission and maintenance.

CBT for Anxiety and Depression

Several studies have examined the efficacy of CBT for those with comorbidity.^{81,82} Using a novel design,⁸¹ nurses ($N=15$) who delivered home-based, palliative care to patients with advanced cancer participated. They were randomized to training to use CBT-based care or provide treatment as usual (TAU) to their respective patients. Patients ($N=80$) had been screened with the HADS (score ≥ 8). CBT nurses provided goal-setting techniques; guided discovery; and CBT-specific applications for helplessness and hopelessness, perceived loss of control, panic,

worry, insomnia, and fear of death. TAU nurses provided advice on symptom management, adjustment to terminal illness, and emotional support. On average, patients treated by CBT nurses received 5.7 sessions and patients treated by TAU nurses received 4.1 sessions. Ten weeks after trial enrollment, patients of CBT trained nurses reported significant reductions in anxiety symptoms, whereas patients receiving TAU did not. At the 16-week follow-up, the percentage of individuals with no anxiety remission (HADS anxiety score > 10) in the CBT group was 19% versus 56% for the TAU group. Depressive symptoms significantly declined for all, with no group differences found.

Another RCT⁸² compared CBT to a supportive counseling control group in patients with newly diagnosed head and neck cancer ($N=35$) meeting criteria for full or subthreshold posttraumatic stress disorder (PTSD), MDD, and/or GAD. Each group received 6 weekly 90-minute individual sessions and a one-month booster. The CBT group provided psychoeducation tailored to the experience of head and neck cancer with components of behavioral activation, activity scheduling, breathing and relaxation training, imaginal exposure to cancer-specific memories, graded *in-vivo* exposure, and cognitive restructuring. Relapse prevention was provided in the booster session. Supportive counseling provided psychoeducation with non-directive support for current concerns and unstructured problem-solving, i.e., patients monitored problems using an unstructured diary.

Overall, both groups reported significantly fewer depression, anxiety, and posttraumatic stress symptoms as well as improvements in global quality of life and reduced negative self-referent appraisals post-treatment. However, the CBT and supportive groups differed in clinically significant symptom improvement, i.e., 56% vs. 25% with improvements in depression, 67% vs. 20% in PTSD, and 60% vs. 25% anxiety, respectively, by 12 months.

A third RCT⁸³ randomized patients ($N=392$) to receive CBT, self-care management (SCM), or TAU. Women in China with breast cancer in China were evaluated using the Chinese version of the HAM-D and/or HAM-A (≥ 8). The CBT and SCM groups received 9 group sessions over 12 weeks, plus a follow-up session at 4- and 12-weeks post-treatment. The CBT group taught patients to identify, dispute, and replace unhelpful beliefs, behavioral strategies to manage distress (e.g., meditation, activity scheduling), and emotional regulation skills. Groups were structured but interactive, using presentations, discussion, and assignment of weekly homework. SCM provided information on cancer treatments, diet after surgery, rehabilitation, and ways to address complications. Analyses showed the CBT group to have significantly less depressive (HAM-D) and anxiety (HAM-A) symptomatology compared to the SCM and TAU groups.

Summary and Conclusions

Oncology medical providers' awareness of clinical depression and anxiety in their patients is improving as is assessment of symptoms, but the next step—additional evaluation and, if necessary, referral to psychological and behavioral services are uncommon. ASCO guidelines specify the means for screening and identify pathways for referral and delivery of empirically supported treatment. As screening becomes more common, the need will increase for mental health care providers and support technicians to assist with mental health technologies.

CBT for MDD and GAD is generally efficacious, and the accumulated evidence shows it to be so for cancer patients as well. RCT data accruing patients with high symptom levels provide general support for CBT for those with significant depressive and anxiety symptomatology and improvement of secondary outcomes (e.g., health related quality of life).

Patients with mood (usually MDD) and anxiety disorders significantly improve on symptom measures and in several studies, there was GAD/MDD remission. Comorbidity of symptoms is infrequently described and would be an important addition to future research as substantial numbers of patients with MDD also have at least one anxiety disorder.

Other research design aspects of the literature are noted. It is important to recognize that what components constitute “CBT” has, in large measure, varied from study to study. There is evidence, but only suggestive, that behavioral activation may be sufficient. To parse these effects from those of the cognitive components a dismantling study could be done, but it would be premature at this time. Newer designs such as a sequential multiple assignment randomized trial (SMART) design might be used to evaluate the effectiveness of a stepwise approach to offering CBT components.

Control conditions are essential to include in future RCTs, as depressive symptoms decline with time. In the current literature, gains have been found across control conditions of waitlist (treatment as usual) and variations on the theme of social support. Head-to-head comparisons of CBT components have generally yielded null findings, likely due to trials being underpowered. Data suggest the generalizability of CBT RCT effects are strong, as CBT gains are replicated across disease types and stage of disease, including those receiving radical treatments and those with progressive disease. The latter underscore ASCO’s recommendation of CBT for patients having moderate to severe symptoms (see Table 1). Taken together, the research literature has significantly advanced, now with convincing empirical support for CBT as the treatment of choice for cancer patients with mood or anxiety disorders.

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Table 1. American Society of Clinical Oncology recommendations for screening, assessment, and treatment in the management of symptoms of depression and anxiety in adults with cancer²³

<i>Screening, assessment, and treatment: Depression in adults with cancer</i>		
Level of Symptomatology determined by the PHQ-9 ^a	Further Assessment	Treatment
None/Mild Score 1-7		Offer referral to supportive care services
Moderate Score 8-14 OR Moderate to Severe Score 15-19 OR Severe Score 20-27	Identify pertinent history/specific risk factors for depression - Family history - Prior depressive disorder - Psychiatric history - Disease severity - Gender - Partner status - Presence of other chronic illness - Employment/SES	Moderate: Low intensity intervention options include: - Individually guided self-help based on CBT - Group-based CBT for depression - Group-based psychosocial interventions - Structured physical activity program - Pharmacologic intervention, as appropriate
		Moderate to Severe: High intensity intervention options include - Individual psychotherapy (CBT, interpersonal therapy) - Pharmacologic intervention - Combination of psychotherapy and pharmacologic intervention
<i>Screening, assessment, and treatment: Anxiety in adults with cancer</i>		
Level of Symptomatology determined by the GAD-7 ^b	Further Assessment	Treatment
None/Mild Score 0-4, 5-9		Offer referral to supportive care services
Moderate Score 10-14 OR Moderate to Severe/Severe Score 15-21	Identify pertinent history/specific risk factors for (generalized) anxiety - Family history - Psychiatric history - History/presence of alcohol or substance abuse - Presence of other chronic illness	Moderate: Low intensity intervention options include: - Education and active monitoring - Non-facilitated or guided self-help based on CBT - Group psychosocial intervention - Pharmacologic intervention, as appropriate
		Moderate to severe: High intensity intervention options include

		- Individual psychotherapy (CBT, applied relaxation) - Pharmacologic intervention - Combination of psychotherapy and pharmacologic intervention
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^aPHQ-9= Patient Health Questionnaire Nine Symptom Depression scale⁶⁶

^bGAD-7= Generalized Anxiety Disorder-7 item⁶⁷

Table 2. Measures used in clinical practice to screen for distress, symptoms of depression, and/or symptoms of anxiety in adult patients with cancer

<i>General Psychological Distress</i>	
<i>Screening Measure</i>	<i>Level of Symptomatology</i>
National Comprehensive Cancer Network (NCCN) Distress Thermometer and Problem Checklist ²⁵	None/Mild: Score <4 Clinically elevated distress: Score $\geq$ 4
<i>Symptoms of Depression and/or Anxiety</i>	
<i>Screening Measure</i>	<i>Level of Symptomatology</i>
Patient Health Questionnaire Nine Symptom Depression Scale (PHQ-9) ²⁶	None/Mild: Score 1-7 Moderate: Score 8-14 Moderate to Severe: Score 15-19 Severe: Score 20-27
Generalized Anxiety Disorder Scale-7 (GAD-7) ²⁹	None/Mild: Score 0-4, 5-9 Moderate: Score 10-14 Moderate to Severe/Severe Score: 15-21
Hospital Anxiety and Depression Scale (HADS) ³⁰	For both subscales None/Mild: Score 0-10 Moderate: Score 11-14 Severe: Score 15-21
<i>Emerging Measures</i>	
PROMIS Emotional Distress-Depression Short Form ³²	None to Slight: T-scores <55.0 Mild: 55.0-59.9 Moderate: 60.0-69.9 Severe: $\geq$ 70
PROMIS Emotional Distress-Anxiety Short Form ³²	None to Slight: T-scores <55.0 Mild: 55.0-59.9 Moderate: 60.0-69.9 Severe: $\geq$ 70