

Psychopathology in Cancer Patients and the Role of Cognitive Behavioral Therapy

Abstract

This review article explores the integration of Cognitive Behavioral Therapy (CBT) into oncology care, underscoring its significance in addressing the psychological distress often encountered by cancer patients. Focusing on the efficacy of CBT in improving psychological outcomes, this article navigates through the benefits of CBT in enhancing coping mechanisms, quality of life, and treatment adherence among cancer patients. It highlights the adaptability of CBT across various delivery formats—individual, group, and digital—tailored to meet diverse patient needs, thereby increasing accessibility and patient engagement. Despite the clear advantages, the review acknowledges the challenges in implementing psychological care within oncology, such as accessibility to trained therapists, maintaining patient adherence, and integrating mental health services into standard oncology practice. These challenges underscore the need for innovation, supportive policies, and comprehensive healthcare provider education to fully realize the potential of psychological interventions within cancer care. The article outlines promising future directions, including expanding access to CBT through digital health technologies and integrating psychological care more seamlessly into oncology. It calls for ongoing research, policy support, and training to ensure that psychological interventions become an integral component of holistic cancer care. In conclusion, this review emphasizes the imperative of a comprehensive approach in oncology that addresses both the physical and psychological needs of cancer patients. By advocating for the integration of CBT and other psychological interventions into cancer care, the article highlights a path toward more compassionate, patient-centered care that supports the overall well-being of individuals navigating the complexities of cancer treatment and recovery.

Keywords: Cancer care, Cognitive behavioural therapy (CBT), Psychological distress, Coping

Introduction

Cancer is not only a major global health issue^[1] but also a source of significant psychological distress^[2] for patients and their families. The diagnosis and treatment of cancer are often accompanied by a profound emotional impact, leading to a wide range of psychological responses, including anxiety, depression, and even post-traumatic stress disorder (PTSD). These psychopathological disorders can significantly affect a patient's quality of life, treatment adherence, and overall prognosis.^[3]

The prevalence of psychopathological disorders among cancer patients is notably high,^[4] with studies indicating that approximately one-third of cancer patients experience significant psychological distress at some point during their illness.^[5] This distress is not a transient issue; for many, it persists throughout treatment and

into survivorship. The psychological impacts of cancer are multifaceted, stemming from the shock of diagnosis,^[6] the uncertainty of outcome, the side effects of treatment,^[7] and the existential threat to one's life and future.

Given these considerations, addressing the psychological aspects of cancer care is paramount. Effective management of psychopathological symptoms can enhance patients' coping strategies,^[8] improve adherence to medical treatments, and ultimately contribute to better health outcomes. However, despite the acknowledged importance of psychological support, it remains underutilized in oncology settings, partly due to a lack of awareness, resources, and trained professionals.

CBT has emerged as a relevant and effective approach for addressing the

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psychological challenges faced by cancer patients. CBT is a form of psychotherapy that focuses on changing unhelpful cognitive distortions and behaviors to improve emotional regulation and develop personal coping strategies. Its application in cancer care is supported by a growing body of evidence, highlighting its efficacy in reducing symptoms of depression, and anxiety, and improving overall well-being.^[9]

The relevance of CBT in the context of cancer lies in its adaptability and the empirical support for its effectiveness across a variety of psychopathological conditions. By providing patients with tools to manage their thoughts, emotions, and behaviors, CBT can play a crucial role in the integrative care of cancer patients, addressing the psychological dimensions of their experience alongside their physical treatment.^[10]

This review aims to explore the psychopathology of cancer patients and examine the application and efficacy of CBT in this context. By synthesizing current research and clinical insights, this article seeks to highlight the importance of psychological care in oncology and propose avenues for integrating CBT into comprehensive cancer care strategies.

The psychological impact of cancer

The diagnosis of cancer is a life-altering event that introduces patients to a challenging journey, not just physically but also psychologically. The psychological impact of cancer encompasses a wide array of disorders, with anxiety, depression, and PTSD being among the most common. The prevalence and intensity of these disorders vary, influenced by factors such as the type and stage of cancer, the patient's psychological predisposition, and the social support available.^[11]

Common psychological disorders in cancer patients

The psychological impact of a cancer diagnosis and subsequent treatment can be profound, affecting patients in various ways that extend beyond the physical manifestations of the disease.^[12] Among the common psychological disorders that cancer patients may experience, anxiety, depression, and PTSD stand out for their frequency and potential impact on overall well-being and treatment outcomes.^[13]

Anxiety is a prevalent condition among cancer patients, often driven by the uncertainty and fear associated with the disease, its treatment, and the possibility of recurrence. This state of continuous worry not only affects patients' mental health but can also manifest in physical symptoms such as palpitations, shortness of breath, and insomnia. These symptoms can exacerbate the discomfort associated with cancer and its treatment, creating a cycle of anxiety and physical distress that complicates symptom management and can even affect the course of the disease. Anxiety may also interfere with patients' ability to make informed decisions about their care, highlighting the need for effective psychological support and interventions.^[14]

Depression represents another significant psychological

challenge for cancer patients, with its effects ranging from a persistent low mood to severe depression that impacts every aspect of life. The experience of depression in cancer patients is multifaceted, affecting motivation, energy levels, and the capacity for pleasure, which in turn can diminish treatment adherence. The reasons behind depression in cancer patients are complex, involving biological, psychological, and social factors. The loss of independence, changes in body image, and the strain of coping with a chronic illness can all contribute to the development of depression. Without appropriate intervention, depression can severely impair a patient's quality of life and may even influence survival rates, underscoring the importance of recognizing and treating this condition in the oncology setting.^[15]

PTSD, while perhaps less commonly recognized in the context of cancer, is a critical concern for a subset of patients. The traumatic nature of a cancer diagnosis and the often aggressive treatments that follow can trigger PTSD, characterized by flashbacks, nightmares, and intense anxiety. These symptoms not only disrupt patients' emotional equilibrium but can also hinder their ability to engage fully with treatment and recovery processes. The experience of PTSD in cancer patients is a stark reminder of the profound psychological impact that the disease and its management can have, necessitating targeted support and therapy to address these issues.^[16]

The presence of anxiety, depression, and PTSD among cancer patients highlights the intricate relationship between psychological well-being and physical health. These disorders not only affect patients' quality of life but can also have tangible effects on treatment adherence and outcomes. Addressing these psychological challenges through comprehensive care plans that include psychological support and appropriate therapies is crucial for improving the overall well-being of cancer patients, reinforcing the need for an integrative approach to cancer care that attends to both the body and the mind.^[17]

Factors contributing to psychopathology in cancer patients

The path to psychological distress in cancer patients is multifaceted, with several key factors contributing to the onset and progression of psychopathological conditions. Understanding these factors is crucial for developing effective interventions and support systems designed to mitigate their impact.

Emotional impact of diagnosis

The moment a cancer diagnosis is delivered, it often marks a profound turning point in a patient's life, initiating a cascade of emotional responses. This period is characterized by a whirlwind of feelings including shock, disbelief, anger, and despair. The psychological blow of confronting one's mortality so directly can set the stage for various mental health issues, as the initial shock gives way to the daunting reality of facing cancer. This emotional turmoil can disrupt an individual's psychological equilibrium, making it challenging to process information, make treatment decisions, and maintain a sense

of hope and positivity.^[18]

Treatment side effects

The physical toll of cancer treatments such as chemotherapy, radiation, and surgery can be severe, leading to a range of debilitating side effects including fatigue, nausea, hair loss, and pain. These side effects not only cause physical discomfort but also contribute to psychological distress by impacting patients' self-esteem, body image, and overall sense of well-being. The relentless nature of these side effects can lead to feelings of helplessness and despair, further exacerbating psychological distress. Moreover, the physical limitations imposed by treatment side effects can interfere with daily activities and hobbies, leading to a loss of identity and purpose.^[19]

Fear of recurrence

For many cancer survivors, the end of treatment does not signify the end of their cancer journey. The fear of recurrence is a pervasive concern that can dominate thoughts and emotions, leading to significant anxiety and stress. This fear often persists even in the absence of physical symptoms, casting a long shadow over the recovery process and potentially hindering survivors' ability to move forward and rebuild their lives. The constant worry about cancer returning can trigger anxiety attacks, disrupt sleep, and lead to a hyper-vigilant state where every ache or pain is feared to be a sign of cancer's return.^[20]

Isolation and social withdrawal

The diagnosis and treatment of cancer can create a sense of isolation from others. Physical changes, fatigue, and the need to focus on treatment can make it difficult for patients to engage in social activities, maintain relationships, or continue working. This withdrawal can be exacerbated by the perception that others cannot truly understand what they are going through, leading to feelings of loneliness and disconnection. The loss of social support and interaction can further contribute to depressive symptoms, as social connections are often a key source of emotional resilience and comfort.^[21]

In addressing the psychopathology of cancer patients, it's essential to consider these contributing factors holistically. Interventions aimed at providing psychological support must not only address the emotional and cognitive aspects of coping with cancer but also the physical and social dimensions of the disease. Creating comprehensive care plans that include mental health support, strategies for managing treatment side effects, interventions to address fears about recurrence, and efforts to foster social connections can significantly improve the psychological well-being of cancer patients.

Impact of psychopathology on treatment outcomes, quality of life, and patient care

The psychological disorders associated with cancer can have profound effects on treatment outcomes and overall quality of life. Patients struggling with depression or anxiety may find it

difficult to adhere to treatment protocols, attend appointments, or engage in recommended lifestyle changes. This can lead to poorer medical outcomes, including decreased survival rates in some cases.

Moreover, the quality of life for these patients is significantly impacted. Psychological distress can diminish the capacity to find joy in life, maintain relationships, and participate in meaningful activities. This not only affects the patients but also their families and caregivers, introducing additional strains on their well-being and financial stability.

In terms of patient care, the presence of psychopathology necessitates a more comprehensive approach that includes mental health support alongside traditional cancer treatments. Recognizing and addressing the psychological effects of cancer is essential for holistic care, underscoring the need for integrated treatment plans that consider both the physical and emotional health of the patient.^[22]

Cognitive behavioral therapy: An overview

Historical background and development of CBT

CBT emerged in the 1960s, primarily through the work of Dr. Aaron T. Beck, a psychiatrist who sought to develop a more empirical and structured approach to psychotherapy. Beck observed that patients often had internal dialogues or thoughts that significantly impacted their emotions and behaviors, particularly in the context of depression. This observation led to the development of CBT, which focuses on identifying and modifying dysfunctional thinking patterns to change emotional responses and behaviors.^[23]

Over the years, CBT has evolved and been adapted for a wide range of psychological disorders, including anxiety, depression, PTSD, and substance abuse. Its application has expanded beyond mental health to address issues related to chronic illness, including cancer, making it a versatile and widely used form of psychotherapy.

Key principles and techniques of CBT

CBT is grounded in the understanding that our thoughts, emotions, and behaviors are deeply interconnected and that altering one aspect can lead to changes in the others. This therapeutic approach is both structured and collaborative, involving active participation from both the therapist and the patient. Below, we expand on the key principles and techniques that form the foundation of CBT, illustrating how they are applied to facilitate change and promote mental well-being.^[24]

Cognitive restructuring

Cognitive restructuring is a central technique in CBT, aimed at identifying, challenging, and ultimately modifying negative and irrational thought patterns. Patients are taught to recognize thoughts that contribute to their distress and to evaluate the evidence for and against these thoughts. This process helps to unveil cognitive distortions—such as catastrophizing, overgeneralization, and black-and-white thinking—that often underlie psychological disorders. By learning to reframe these

thoughts more realistically and positively, patients can diminish their emotional distress and engage in healthier behaviors. Cognitive restructuring empowers individuals by showing them that while they may not control every aspect of their environment, they can control how they interpret and respond to it.^[25]

Behavioral activation

Behavioral activation focuses on encouraging patients to engage in activities that they find pleasurable or that give them a sense of accomplishment. This technique is particularly effective for depression, where withdrawal and inactivity can exacerbate symptoms. By identifying and participating in rewarding activities, patients can break the cycle of inactivity and negative mood. The process involves setting small, achievable goals, and gradually increasing the level and complexity of activities. This not only improves mood but also reinforces the connection between activity and positive emotional experiences, building momentum for further action.^[26]

Exposure therapy

Exposure therapy is used to address anxiety disorders, phobias, and PTSD. It involves the gradual and systematic exposure to feared objects, situations, or memories in a controlled and safe environment. The aim is to reduce the fear response through repeated exposure, allowing the patient to learn that the feared outcome is unlikely to occur or that they can cope with it effectively. This technique helps to desensitize individuals to their fears, reduce avoidance behaviors, and increase their sense of control and mastery over their emotions.^[27]

Stress management

Stress management techniques are integral to CBT, equipping patients with tools to manage stress and regulate their emotional responses. Techniques such as deep breathing, progressive muscle relaxation, and mindfulness meditation are commonly taught. These practices help patients activate their body's relaxation response, counteracting the stress response and reducing physiological symptoms of stress. By incorporating these techniques into their daily routine, patients can improve their ability to cope with stressors, reducing the overall impact of stress on their mental health.

The efficacy of CBT lies in its structured approach, empirical support, and adaptability to different disorders and individual needs. By focusing on the present and providing practical strategies for dealing with current problems, CBT offers a powerful means of effecting positive change in patients' thoughts, emotions, and behaviors, ultimately improving their quality of life.^[28]

The rationale behind using CBT for cancer patients

The application of CBT for cancer patients is underpinned by its effectiveness in addressing the multifaceted emotional and psychological challenges that accompany a cancer diagnosis and treatment. This therapeutic approach is particularly suited to the oncology setting for several reasons, which we'll expand

upon below, detailing how CBT can be a crucial component in the comprehensive care of cancer patients.

Managing anxiety and depression

Cancer patients are at an increased risk for developing anxiety and depression, not only due to the direct impact of the diagnosis but also because of the uncertainties and changes that come with it. CBT tackles these issues head-on by helping patients identify negative thought patterns—such as catastrophic thinking or overgeneralization—that fuel their anxiety and depression. By challenging these thoughts and replacing them with more balanced and realistic perspectives, patients can experience a significant reduction in their symptoms. This cognitive restructuring, combined with behavioral techniques, enables patients to engage more fully in life, despite their diagnosis, reducing the overall burden of anxiety and depression.^[29]

Improving coping strategies

The journey through cancer diagnosis, treatment, and beyond demands adaptive coping strategies that can help patients navigate this challenging period. CBT provides a structured framework within which patients can develop and refine these skills. Techniques such as problem-solving, stress management, and assertive communication are taught and practiced, equipping patients with a toolkit to manage the psychological stressors associated with cancer. These strategies not only aid in handling the immediate stressors but also build resilience for future challenges, facilitating a more adaptive response to the ongoing uncertainties of cancer.^[30]

Enhancing treatment adherence and quality of life

Adherence to complex and often burdensome cancer treatments can be significantly influenced by a patient's psychological state. CBT has a positive impact on treatment adherence by addressing the psychological barriers to following medical recommendations, such as fear of side effects or feelings of hopelessness. Furthermore, by improving patients' moods and reducing stress, CBT can enhance their overall quality of life, making the treatment journey more manageable. The skills and strategies learned through CBT empower patients to take an active role in their care, improving their sense of control and well-being.^[31]

Addressing fear of recurrence

One of the most pervasive fears among cancer survivors is the fear of disease recurrence. This fear can be paralyzing, affecting all aspects of life and well-being long after treatment has ended. CBT addresses this fear through exposure therapy, cognitive restructuring, and other techniques that help patients confront and manage these concerns. By learning to live with uncertainty and developing strategies to cope with fear when it arises, patients can reduce the power this fear holds over them, leading to improved mental health and quality of life.

The rationale for using CBT in the cancer care setting is robust, offering targeted interventions to address the specific psychological challenges faced by cancer patients. Its structured yet flexible approach allows for personalized care

that can make a significant difference in patient's lives, not just in managing the emotional fallout of cancer but in empowering them to navigate their journey with resilience and hope.^[32]

Application of CBT in cancer care

Efficacy of CBT in managing psychopathology in cancer patients

Numerous studies and clinical trials have demonstrated the efficacy of CBT in managing psychopathological symptoms among cancer patients. A meta-analysis of randomized controlled trials (RCTs) has shown that CBT significantly reduces symptoms of depression and anxiety in this population. For instance, Guarino and colleagues (2020), studied that CBT interventions led to meaningful improvements in mood, anxiety levels, and quality of life among breast cancer survivors. Similarly, research in the context of palliative care has indicated that CBT can effectively alleviate distress and enhance coping skills in patients with advanced cancer.^[33]

Types of CBT interventions and their outcomes

CBT interventions offer a versatile and effective approach to addressing the psychological challenges faced by cancer patients. The adaptability of CBT to different formats allows it to meet a wide range of patient needs, making it a valuable tool in the oncology setting. Below, we delve deeper into the types of CBT interventions and the specific outcomes they can achieve.

Individual CBT

Individual CBT sessions provide a confidential and personalized setting in which patients can work closely with a therapist to address their specific concerns. This one-on-one approach facilitates a deep dive into the patient's thought patterns, emotions, and behaviors, allowing for tailored interventions that directly address the roots of psychological distress. For patients dealing with complex emotional issues or severe psychological symptoms, individual CBT offers the intensity and focus needed for significant therapeutic progress. The personalized attention also allows for the adjustment of therapy pace and techniques according to the patient's response, making it a highly effective format for those requiring more intensive support.^[34]

Group CBT

Group CBT capitalizes on the power of shared experiences and peer support. Conducted with a group of patients facing similar challenges, this format provides a platform for individuals to learn from each other, share coping strategies, and realize they are not alone in their struggles. The sense of community and belonging that emerges in group settings can be particularly therapeutic, helping to alleviate feelings of isolation. Furthermore, group CBT sessions offer the opportunity to practice social skills and receive feedback in a supportive environment, contributing to the enhancement of social support networks. The group format is particularly effective in teaching and reinforcing coping strategies, as participants can see these strategies being applied by their peers, adding a layer

of practical learning to the theoretical understanding.^[35]

Online CBT (eCBT)

The advent of digital technology has extended the reach of CBT through online platforms and telehealth services, making it more accessible to those who may not have been able to receive traditional face-to-face therapy due to geographical, physical, or logistical barriers. Online CBT (eCBT) provides flexibility and convenience, allowing patients to engage in therapy from the comfort of their own homes and at times that suit their schedules. This format is particularly effective for delivering structured CBT interventions, with interactive tools and resources that enhance learning and engagement. Research has shown that eCBT can produce outcomes comparable to in-person therapy, with the added benefits of increased accessibility and potentially lower costs.^[36]

Outcomes of CBT interventions

Regardless of the format, CBT interventions for cancer patients have been consistently linked with positive outcomes. These include a reduction in symptoms of anxiety and depression, improved coping mechanisms for dealing with the stressors of cancer and its treatment, and an overall enhancement in quality of life. By providing patients with practical skills to manage their thoughts and emotions, CBT interventions foster a sense of control and resilience, empowering patients to navigate the psychological challenges of cancer more effectively.

The choice of CBT intervention depends on various factors, including the patient's personal preferences, the severity of their symptoms, and the resources available. By carefully considering these factors, healthcare providers can recommend the most suitable CBT format, ensuring that each patient receives the most beneficial support for their unique situation.^[8]

Challenges and considerations in applying CBT to cancer patients

Applying CBT to cancer patients, while highly beneficial, involves navigating a series of challenges and considerations unique to this population. These challenges require careful attention and adaptation of CBT practices to ensure they meet the nuanced needs of individuals facing cancer. Below, we expand on these challenges and considerations.

Tailoring interventions to individual needs

Cancer encompasses a wide range of conditions, each with its trajectory, treatment options, and psychological impacts. Patients may be at different stages of their disease and have varied psychological responses to their diagnosis and treatment. This diversity necessitates a highly personalized approach to therapy. Therapists must possess the flexibility to modify CBT techniques, making them relevant to the specific type of cancer, stage of disease, and the individual's psychological state. For example, a patient in the early stages of cancer might need support in managing anxiety related to treatment, while someone in remission may require help in

coping with the fear of recurrence. Tailoring interventions demands not only a deep understanding of CBT principles but also a comprehensive knowledge of oncology and the psychosocial aspects of cancer care.^[37]

Dealing with advanced disease

Patients with advanced cancer often grapple with profound existential questions and intense physical symptoms, which can challenge the application of standard CBT approaches. Addressing existential concerns might require integrating elements of existential therapy into CBT, focusing on finding meaning and acceptance in the face of a terminal diagnosis. Additionally, the physical symptoms associated with advanced cancer and its treatments necessitate a focus on pain management and symptom control within the CBT framework. Therapists may need to employ strategies that specifically target the alleviation of physical discomfort as a component of psychological care, emphasizing the interconnection between physical and mental health.^[38]

Accessibility and resource constraints

The availability of CBT for cancer patients can be significantly limited by geographical, financial, and resource-based constraints. Patients living in non-urban areas may find it particularly challenging to access specialized CBT practitioners. Furthermore, the cost of individual therapy sessions may be beyond the reach of some patients, posing a significant barrier to accessing care. While group therapy and online interventions offer potential solutions to these issues, they may not be appropriate or preferred by all patients. Developing innovative delivery models and leveraging technology can help increase accessibility, but these efforts must be accompanied by policy and funding support to ensure equitable access to psychological care for all cancer patients.^[39]

Training and supervision

Providing effective CBT to cancer patients requires therapists to have specialized training that encompasses both the principles of CBT and an understanding of oncology. Ongoing supervision is crucial to ensure that therapists remain adept at handling the complex emotional and psychological issues that cancer patients face. This specialized training and supervision ensure that therapists can navigate the unique challenges of applying CBT in an oncology context, including dealing with terminal illness, complex grief, and the physical side effects of cancer treatments.

Despite these challenges, the application of CBT in cancer care continues to represent a critical area of development within clinical practice and research. By addressing these considerations and continuing to refine CBT interventions to better meet the needs of cancer patients, healthcare professionals can significantly enhance the psychological support provided to this vulnerable population, ultimately improving their quality of life and well-being.^[40]

Benefits of CBT in cancer care

The integration of CBT into cancer care offers a multitude of

benefits, significantly enhancing the psychological and overall well-being of patients navigating the complexities of cancer diagnosis, treatment, and recovery. Expanding on these benefits further illustrates the profound impact CBT can have on the lives of individuals facing cancer.

Improvement in psychological outcomes

CBT's structured approach to identifying and modifying maladaptive thoughts and behaviors is particularly effective in reducing symptoms of anxiety, depression, and PTSD, which are common among cancer patients. The therapy focuses on challenging and replacing negative thought patterns with more positive and realistic ones, thereby reducing emotional distress. For instance, a patient fearing the outcome of their treatment may learn to recognize and adjust catastrophic thoughts, leading to a more balanced emotional state. This cognitive restructuring, coupled with behavioral interventions, significantly improves emotional well-being, making CBT a cornerstone of psychological support in cancer care.^[41]

Enhanced coping strategies

Cancer patients often face a barrage of stressors, including the physical side effects of treatments, financial pressures, and the existential dread associated with the illness. CBT provides a toolkit of practical strategies for managing these stressors effectively. Techniques such as problem-solving to tackle practical concerns, relaxation exercises to manage physical symptoms of stress, and cognitive strategies to deal with fears about the future empower patients with a sense of control. This empowerment is crucial, as it transforms the patient's role from a passive recipient of care to an active participant in their healing process, fostering resilience and adaptability.^[42]

Improved quality of life

The psychological distress associated with cancer can significantly impair a patient's quality of life, affecting sleep, social interactions, and overall engagement in life. By alleviating this distress and enhancing coping skills, CBT directly contributes to improved quality of life. Patients report better sleep patterns, increased participation in social and physical activities, and a renewed ability to find joy and satisfaction in life. These improvements are not just subjective; they are often reflected in objective measures of physical health and recovery, underscoring the interconnectedness of mental and physical well-being.^[43]

Increased treatment adherence

Adhering to cancer treatment protocols can be challenging for patients, particularly when faced with the side effects of treatment or when psychological distress undermines their motivation. CBT's role in improving mental health status and providing stress management skills enhances patients' capacity to adhere to treatment recommendations. This is because patients who feel emotionally supported and equipped with coping strategies are better able to navigate the ups and downs of treatment. Improved adherence is not only beneficial for the patient's immediate health outcomes but can also influence long-term survival and recovery rates.^[44]

Integrating CBT with other therapies and interventions

Integrating CBT with other therapeutic approaches and interventions in cancer care can provide a comprehensive and holistic treatment model that addresses the multifaceted nature of cancer-related psychological distress. This integrated approach recognizes that the psychological impacts of cancer are complex and may require multiple strategies for effective management. Below, we delve deeper into the potential of these integrations and the future direction toward personalized medicine in psycho-oncology.

Integration with mindfulness-based stress reduction (MBSR)

MBSR emphasizes present-moment awareness and non-judgmental acceptance of one's experiences, which can complement CBT's focus on changing negative thought patterns and behaviors. The combination can help patients manage stress and anxiety more effectively, promoting a sense of calm and resilience in the face of cancer-related challenges.

Combining CBT with acceptance and commitment therapy (ACT)

ACT focuses on accepting what is out of one's control while committing to action that enriches life. When integrated with CBT, patients can benefit from a dual approach that helps them challenge and change unhelpful thoughts while also developing a more accepting stance towards difficult emotions and experiences. This can be particularly beneficial for dealing with the uncertainty and existential concerns that often accompany a cancer diagnosis.

CBT and medication

For some patients, especially those with severe psychological symptoms, combining CBT with pharmacotherapy may be necessary. Medications can provide symptom relief, enabling patients to engage more fully in CBT and apply its techniques more effectively. Collaboration between mental health professionals and oncologists is crucial to ensure that the combined treatment approach is coordinated and tailored to the patient's needs.

Innovations in delivering CBT to cancer patients

The evolution of technology and its integration into healthcare has opened up new avenues for delivering CBT to cancer patients, offering innovative solutions to traditional barriers of accessibility, cost, and scalability. Below, we expand on these innovations and their potential impact on the field of oncology.

Digital and telehealth platforms

The advent of digital health technologies has significantly broadened the scope for delivering CBT, making it more accessible to a wider audience. AI-driven CBT platforms, for instance, can offer personalized therapy sessions based on the user's inputs, adapting in real-time to their needs and progress. This AI personalization means that therapy can become more responsive and tailored than ever before, potentially increasing its effectiveness.

Virtual Reality (VR) interventions represent another innovative approach, immersing patients in environments where they can safely confront fears, practice relaxation techniques, or learn coping strategies in a controlled, virtual space. This could be particularly beneficial for patients dealing with anxiety or PTSD, providing a novel way to engage with therapy that is both engaging and effective.

Wearable technology, on the other hand, offers continuous monitoring of physiological indicators of stress and anxiety, such as heart rate variability. This real-time data can be used to alert patients to heightened levels of stress or anxiety, prompting them to engage in CBT-based exercises or relaxation techniques to manage their symptoms proactively.^[45]

Self-administered CBT

The development of self-administered CBT programs leverages the convenience and accessibility of digital platforms and mobile apps, making it possible for patients to engage with therapeutic content at their own pace and in their own space. These self-guided interventions can help mitigate the challenges posed by the limited availability of therapists and geographical barriers to accessing care.

However, the effectiveness of these programs hinges on their ability to engage users and ensure adherence to the therapeutic process. To this end, incorporating interactive elements, personalized feedback, and gamification strategies can enhance user engagement. Additionally, the integration of support networks or peer forums within these platforms can provide the social support necessary to motivate patients to continue with the program.^[46]

Integration into oncology care

Integrating CBT more closely with standard oncology care practices presents an opportunity to embed psychological support within the cancer care pathway seamlessly. Training oncology nurses and other healthcare professionals in the basic principles of CBT allows them to offer immediate, evidence-based support to patients experiencing psychological distress. Moreover, these trained professionals can serve as a bridge, connecting patients with more specialized psychological interventions when necessary.

Such integration not only ensures that patients receive comprehensive care that addresses both their physical and psychological needs but also promotes a culture of holistic care within oncology settings. By recognizing and responding to the psychological aspects of cancer treatment as part of routine care, the oncology community can significantly enhance patient outcomes and well-being.^[47]

Clinical implications and recommendations for integrating CBT into cancer care

Integrating CBT into cancer care represents a paradigm shift towards a more holistic and patient-centered approach to treatment. The clinical implications of this integration are

profound, necessitating changes in routine care practices and emphasizing the importance of psychological health in the overall treatment plan. Below, we explore these implications further and offer recommendations to ensure the effective integration of CBT into cancer care.

Tailored CBT interventions

Tailoring CBT interventions to the specific needs, preferences, and cultural backgrounds of cancer patients is vital for maximizing their effectiveness. Clinicians should engage in thorough assessments to understand the unique concerns and circumstances of each patient, whether it be dealing with the fear of recurrence, managing treatment side effects, or navigating existential issues related to their diagnosis. This personalized approach may involve adapting CBT techniques to be culturally sensitive and relevant to the patient's life context. Additionally, considering patient preferences in the mode of therapy delivery (individual, group, or online) can enhance engagement and satisfaction with treatment. Ongoing evaluation and adjustment of the therapy plan are essential to ensure that the interventions remain responsive to the patient's evolving needs.^[48]

Recommendations for training healthcare providers in CBT techniques

Incorporate CBT training into healthcare education

Integrating CBT training into the foundational education of medical, nursing, and allied health professionals is essential. By embedding basic CBT principles and techniques within the curricula, future healthcare providers can gain early exposure to the importance of psychological care inpatient treatment. This foundational knowledge can help them recognize signs of psychological distress, understand the role of maladaptive thought patterns in affecting patient well-being, and apply basic CBT strategies to support patients effectively. Additionally, including case studies and practical exercises in the curriculum can provide students with real-world applications of CBT, enhancing their understanding and ability to integrate these techniques into their future practice.^[49]

Continuing education and specialization

For healthcare providers already working in oncology and other settings, offering continuing education opportunities in CBT is vital for expanding their skill set and staying abreast of the latest developments in psychological care. Workshops, seminars, and online courses can provide in-depth training on specific CBT techniques and their application to cancer care. Encouraging specialization in psycho-oncology, including certification programs, can further develop providers' expertise in delivering CBT to cancer patients. Specialization ensures that healthcare professionals are not only proficient in CBT techniques but also understand the unique psychological challenges faced by cancer patients, enabling them to offer more targeted and effective support.^[50]

Supervision and mentoring

Implementing supervision and mentoring programs is another critical recommendation for fostering the development of CBT

skills among healthcare providers. Novice practitioners can greatly benefit from the guidance of experienced CBT therapists through regular supervision sessions. These sessions can offer a platform for discussing cases, receiving feedback on therapy sessions, and navigating the complexities of integrating CBT into medical care. Peer support groups and case consultation meetings can also provide valuable opportunities for healthcare professionals to share experiences, discuss challenges, and learn from each other's successes in applying CBT. Such collaborative learning environments can significantly enhance skill development, confidence, and the overall quality of psychological care provided to patients.^[51]

Policy implications for supporting psychological care in oncology

The integration of psychological care, including CBT, into oncology is not just a clinical necessity but also a policy priority. Addressing the psychological needs of cancer patients requires a concerted effort from policymakers to create a supportive framework that promotes access, equity, and quality of care. Below, we delve deeper into the policy implications for supporting psychological care in oncology.

Funding and resources

A significant barrier to the integration of psychological services in cancer care is the lack of dedicated funding and resources. Policymakers play a crucial role in allocating funds that can support the widespread implementation of psychological interventions. This includes providing reimbursement for psychological treatments under health insurance schemes, which can significantly reduce the financial burden on patients and encourage them to seek necessary care. Additionally, investing in training programs for healthcare providers not only enhances the quality of psychological support available but also ensures a larger pool of professionals equipped to deliver CBT and other therapies. Funding should also extend to the development and maintenance of infrastructure needed for effective delivery, such as telehealth platforms and patient management systems.

Access and equity

Ensuring that all cancer patients have equitable access to psychological care is a critical policy objective. Disparities in access to care can arise from geographic isolation, socioeconomic factors, and cultural barriers. Policies aimed at expanding telehealth services can make psychological care more accessible to patients in remote or underserved areas, reducing the need for travel and enabling care delivery in the comfort of the patient's home. Furthermore, community-based interventions can be supported to reach populations that may face barriers to accessing traditional healthcare settings. Policy measures should also focus on cultural competence training for providers to ensure that psychological care is sensitive to and inclusive of the diverse backgrounds and needs of cancer patients.^[51]

Quality of care standards

Incorporating psychological care as a core component of cancer treatment necessitates the establishment of quality care standards. These standards should define the scope, delivery, and evaluation of psychological services within oncology care, ensuring that patients receive comprehensive support that addresses both their physical and emotional health. Making the accreditation of cancer care facilities contingent upon the inclusion of psychological support services can drive improvements in care quality and encourage facilities to prioritize the integration of these services. Quality standards should also emphasize the importance of patient-centered care, ensuring that psychological interventions are tailored to the individual needs and preferences of patients.

Research and innovation

Supporting research into the effectiveness of CBT and other psychological interventions in cancer care is essential for advancing the field and identifying best practices. Policymakers can facilitate this by funding research projects and initiatives that explore innovative delivery models, the integration of psychological care into oncology practice, and the outcomes of psychological interventions on patient well-being and treatment adherence. Encouraging innovation in service delivery, such as the development of digital therapeutic tools and AI-driven platforms, can help address current gaps in access to psychological support and pave the way for more personalized and effective care.

Conclusion

The integration of CBT into the framework of cancer care represents a significant paradigm shift towards a more holistic approach to treatment. This comprehensive review has elucidated the profound impact of CBT in mitigating the psychological distress that frequently accompanies a cancer diagnosis, emphasizing its pivotal role in enhancing patients' coping mechanisms, improving their overall quality of life, and potentially fostering better adherence to medical treatment regimens. The adaptability of CBT, with its applicability in individual, group, or digital formats, ensures that it can cater to the wide-ranging needs and preferences of cancer patients, thereby improving accessibility and fostering greater patient engagement in their care.

Despite the demonstrated benefits of CBT, the implementation of psychological care within oncology faces notable challenges. These include ensuring widespread access to trained therapists, maintaining patient adherence to psychological interventions, and integrating mental health services seamlessly into standard oncology practice. These challenges highlight the critical need for innovation in service delivery, robust policy support, and comprehensive education and training for healthcare providers. Addressing these issues is paramount to fully realizing the potential of psychological interventions, including CBT, in transforming cancer care.

Looking towards the future, the trajectory of psychological care in oncology is marked by optimism and potential. The increasing recognition of the indispensability of addressing

both the psychological and physical aspects of cancer care is a testament to the evolving understanding of patient needs. The advent of digital health technologies, including telehealth and mobile health applications, presents unprecedented opportunities to broaden the reach of CBT, ensuring that more patients have access to essential psychological support regardless of geographic or socioeconomic barriers.

The path forward will undoubtedly require sustained research efforts to refine and validate innovative psychological interventions, supportive health policies that prioritize mental health in oncology settings, and targeted training programs to equip healthcare providers with the skills necessary to deliver comprehensive psychological care. Such concerted efforts will ensure that psychological interventions like CBT become an integral, indivisible component of cancer care.

In conclusion, the incorporation of CBT and other psychological interventions into oncology signifies a crucial advancement toward delivering comprehensive, patient-centered care that addresses the full spectrum of patient needs. As the field of oncology continues to progress, the mental health needs of cancer patients must be accorded the same level of attention and care as their physical health needs. This holistic approach is not only essential for improving patient outcomes but is also reflective of a compassionate care paradigm that recognizes the complexity of the cancer experience. The future of oncology care lies in its ability to blend the best of medical treatment with robust psychological support, ensuring that every patient can navigate their cancer journey with resilience, dignity, and hope.

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Conflict of interest

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Ethics statement

None.

References

1. Ferlay J, Colombet M, Soerjomataram I, Parkin DM, Piñeros M, Znaor A, et al. Cancer statistics for the year 2020: An overview. *Int J Cancer*. 2021;149(4):778-89.
2. Eckerling A, Ricon-Becker I, Sorski L, Sandbank E, Ben-Eliyahu S. Stress and cancer: Mechanisms, significance and future directions. *Nat Rev Cancer*. 2021;21(12):767-85.
3. Joshy G, Thandrayen J, Koczwara B, Butow P, Laidsaar-Powell R, Rankin N, et al. Disability, psychological distress and quality of life in relation to cancer diagnosis and cancer type: Population-based Australian study of 22,505 cancer survivors and 244,000 people without cancer. *BMC Med*. 2020;18:1-5.
4. Chang WH, Lai AG. Cumulative burden of psychiatric disorders and self-harm across 26 adult cancers. *Nature Med*. 2022;28(4):860-70.

5. Herschbach P, Britzelmeir I, Dinkel A, Giesler JM, Herkommer K, Nest A, et al. Distress in cancer patients: Who are the main groups at risk? *Psycho-Oncol.* 2020;29(4):703-10.
6. Mathew A, Lockwood MB, Steffen A, Tirkey AJ, Pavamani SP, Patil CL, et al. Symptom cluster experiences of patients operated for oral cancer: a mixed methods study. In *Seminars in Oncology Nursing* 2023 Jun 1 (Vol. 39, No. 3, p. 151407). WB Saunders.
7. Dreno B, Amici JM, Demessant-Flavigny AL, Wright C, Taieb C, Desai SR, et al. The impact of acne, atopic dermatitis, skin toxicities and scars on quality of life and the importance of a holistic treatment approach. *Clin Cosmet Investig Dermatol.* 2021;14:623-32.
8. Greer JA, Applebaum AJ, Jacobsen JC, Temel JS, Jackson VA. Understanding and addressing the role of coping in palliative care for patients with advanced cancer. *J Clin Oncol.* 2020;38(9):915.
9. Emery J, Butow P, Lai-Kwon J, Nekhlyudov L, Rynderman M, Jefford M. Management of common clinical problems experienced by survivors of cancer. *Lancet.* 2022;399(10334):1537-50.
10. Getu MA, Chen C, Panpan W, Mboineki JF, Dhakal K, Du R. The effect of cognitive behavioral therapy on the quality of life of breast cancer patients: A systematic review and meta-analysis of randomized controlled trials. *Qual Life Res.* 2021;30:367-84.
11. Vella MA, Warshauer A, Tortorello G, Fernandez-Moure J, Giacalone J, Chen B, et al. Long-term functional, psychological, emotional, and social outcomes in survivors of firearm injuries. *JAMA Surg.* 2020;155(1):51-9.
12. Dinapoli L, Colloca G, Di Capua B, Valentini V. Psychological aspects to consider in breast cancer diagnosis and treatment. *Curr Oncol Rep.* 2021;23:1-7.
13. Sommer JL, Reynolds K, El-Gabalawy R, Pietrzak RH, Mackenzie CS, Ceccarelli L, et al. Associations between physical health conditions and posttraumatic stress disorder according to age. *Aging Ment Health.* 2021;25(2):234-42.
14. Naser AY, Hameed AN, Mustafa N, Alwafi H, Dahmash EZ, Alyami HS, et al. Depression and anxiety in patients with cancer: A cross-sectional study. *Front Psychol.* 2021;12:585534.
15. Götz H, Friedrich M, Taubenheim S, Dietz A, Lordick F, Mehnert A. Depression and anxiety in long-term survivors 5 and 10 years after cancer diagnosis. *Support Care Cancer.* 2020;28:211-20.
16. Marziliano A, Tuman M, Moyer A. The relationship between post-traumatic stress and post-traumatic growth in cancer patients and survivors: A systematic review and meta-analysis. *Psycho-Oncol.* 2020;29(4):604-16.
17. Al-Saadi LS, Chan MF, Al-Azri M. Prevalence of anxiety, depression, and post-traumatic stress disorder among children and adolescents with cancer: A systematic review and meta-analysis. *J Pediatr Hematol/Oncol Nurs.* 2022;39(2):114-31.
18. Vogt J, Beyer F, Sistermanns J, Kuon J, Kahl C, Alt-Epping B, et al. Symptom burden and palliative care needs of patients with incurable cancer at diagnosis and during the disease course. *Oncol.* 2021;26(6):e1058-65.
19. Zhang X, Sun D, Qin N, Liu M, Jiang N, Li X. Factors correlated with fear of cancer recurrence in cancer survivors: A meta-analysis. *Cancer Nurs.* 2022;45(5):406-15.
20. Pahl DA, Wieder MS, Steinberg DM. Social isolation and connection in adolescents with cancer and survivors of childhood cancer: A systematic review. *J Adolesc.* 2021;87:15-27.
21. de Beurs E, Carlier I, van Hemert A. Psychopathology and health-related quality of life as patient-reported treatment outcomes: Evaluation of concordance between the brief symptom inventory (BSI) and the short form-36 (SF-36) in psychiatric outpatients. *Qual Life Res.* 2021:1-1.
22. Beck AT, Weishaar M. *Cognitive therapy.* Springer US; 1989.
23. Beck JS. *Cognitive behavior therapy: Basics and beyond.* Guilford Publications; 2020.
24. Ciharova M, Furukawa TA, Efthimiou O, Karyotaki E, Miguel C, Noma H, et al. Cognitive restructuring, behavioral activation and cognitive-behavioral therapy in the treatment of adult depression: A network meta-analysis. *J Consult Clin Psychol.* 2021;89(6):563.
25. Lehmann DC, Boerdlein C. A systematic review of culturally adapted behavioral activation treatments for depression. *Res Soc Work Pract.* 2020;30(6):688-702.
26. Leahy RL, Clark DA, Dozois DJ. *Cognitive-behavioral theories. Gabbard's Textbook of Psychotherapeutic Treatments;* American Psychiatric Pub.: Washington, DC, USA. 2022:151.
27. Mazurek Melnyk B, Hoying J, Tan A. Effects of the MINDSTRONG® CBT-based program on depression, anxiety and healthy lifestyle behaviors in graduate health sciences students. *J Am Coll Health.* 2022;70(4):1001-9.
28. Sun H, Huang H, Ji S, Chen X, Xu Y, Zhu F, et al. The efficacy of cognitive behavioral therapy to treat depression and anxiety and improve quality of life among early-stage breast cancer patients. *Integr Cancer Ther.* 2019;18:1534735419829573.
29. Lai HL, Chen CI, Lu CY, Huang CY. Cognitive behavioral therapy plus coping management for depression and anxiety on improving sleep quality and health for patients with breast cancer. *Brain Sci.* 2021;11(12):1614.
30. Lewandowska A, Rudzki G, Lewandowski T, Próchnicki M, Rudzki S, Laskowska B, et al. Quality of life of cancer patients treated with chemotherapy. *Int J Environ Res Public Health.* 2020;17(19):6938.
31. van de Wal M, Servaes P, Berry R, Thewes B, Prins J. Cognitive behavior therapy for fear of cancer recurrence: A case study. *J Clin Psychol Med Settings.* 2018;25:390-407.
32. Guarino A, Polini C, Forte G, Favieri F, Boncompagni I, Casagrande M. The effectiveness of psychological treatments in women with breast cancer: A systematic review and meta-analysis. *J Clin Med.* 2020;9(1):209.
33. Rapley HA, Loades ME. A systematic review exploring therapist competence, adherence, and therapy outcomes in individual CBT for children and young people. *Psychother Res.* 2019;29(8):1010-9.
34. Keles S, Idsoe T. A meta-analysis of group cognitive behavioral therapy (CBT) interventions for adolescents with depression. *J Adolesc.* 2018;67:129-39.
35. Alavi N, Omrani M. *Online cognitive behavioral therapy.* Springer International Publishing; 2019.
36. Bäuerle A, Martus P, Erim Y, Schug C, Heinen J, Krakowczyk JB, et al. Web-based mindfulness and skills-based distress reduction for patients with cancer: Study protocol of the multicentre, randomised, controlled confirmatory intervention trial *Reduct.* *BMJ Open.* 2022;12(6):e056973.
37. Sheikhzadeh M, Zanjani Z, Baari A. Efficacy of mindfulness-based cognitive therapy and cognitive behavioral therapy for anxiety, depression, and fatigue in cancer patients: A randomized clinical trial. *Iran J Psychiatry.* 2021;16(3):271.
38. Zimmermann-Schlegel V, Hartmann M, Sklenarova H, Herzog W, Haun MW. Accessibility, availability, and potential benefits of psycho-oncology services: The perspective of community-based physicians providing cancer survivorship care. *Oncol.* 2017;22(6):719-27.
39. O'Hayer CV, Nobleza DN, Inch S, Rene R, Capparella L, Vergare M, et al. Behavioral health for the front line: Lessons from the Covid-19 pandemic. *NEJM Catal Innov Care Deliv.* 2021;2(7).
40. Elyasi F, Taghizadeh F, Zarghami M, Moosazadeh M, Abdollahi Chirani S, Babakhanian M. Cognitive-behavioral therapy and hypnosis intervention on anxiety, depression, and quality of life in patients with breast cancer undergoing chemotherapy: A clinical trial. *Middle East J Cancer.* 2021;12(2):236-48.
41. Jamshidi F, Shayan A, Sattari M. Investigating the impact of cognitive-behavioral stress management on adjustment among females with breast cancer. *Curr Women's Health Rev.* 2022;18(4):101-10.
42. Ye M, Du K, Zhou J, Zhou Q, Shou M, Hu B, et al. A meta-analysis of the efficacy of cognitive behavior therapy on quality of life and psychological health of breast cancer survivors and patients. *Psycho-Oncol.* 2018;27(7):1695-703.
43. Landa-Ramírez E, Greer JA, Sánchez-Román S, Manolov R, Salado-Avila MM, Templos-Esteban LA, et al. Tailoring cognitive behavioral therapy for depression and anxiety symptoms in Mexican terminal cancer patients: A multiple baseline study. *J Clin Psychol Med Settings.* 2020;27:54-67.
44. Chan RJ, Crichton M, Crawford-Williams F, Agbejule OA, Yu K, Hart NH, et al. The efficacy, challenges, and facilitators of telemedicine in post-treatment cancer survivorship care: An overview of systematic reviews. *Ann Oncol.* 2021;32(12):1552-70.
45. Greer JA, Jacobs J, Pensak N, MacDonald JJ, Fuh CX, Perez GK, et al. Randomized trial of a tailored cognitive-behavioral therapy mobile application for anxiety in patients with incurable cancer. *Oncol.* 2019;24(8):1111-20.
46. Fann JR, Ruark J, Sharpe M. Delivering integrated psychosocial oncology care. *Psycho-Oncol.* 2021:385.

47. Watson M, Dunn J. The multidisciplinary art and science of cancer care: Integrating psycho-oncology. *Future Oncol.* 2016;12(24):2775-8.
48. Siber-Sanderowitz S, Gallo L. From pathways to partnerships: Building patient-centered clinical tracks (PCCT) in outpatient community mental health settings. *Community Ment Health J.* 2024;60(3):411-25.
49. Ugwuanyi CS, Gana CS, Ugwuanyi CC, Ezenwa DN, Eya NM, Ene CU, et al. Efficacy of cognitive behaviour therapy on academic procrastination behaviours among students enrolled in physics, chemistry and mathematics education (PCME). *J Ration-Emot Cogn-Behav Ther.* 2020;38:522-39.
50. Alfano CM, Leach CR, Smith TG, Miller KD, Alcaraz KI, Cannady RS, et al. Equitably improving outcomes for cancer survivors and supporting caregivers: A blueprint for care delivery, research, education, and policy. *CA Cancer J Clin.* 2019;69(1):35-49.
51. Porter AB, Chukwueke UN, Mammoser AG, Friday B, Hervey-Jumper S. Delivering equitable care to underserved neuro-oncology populations. *Am Soc Clin Oncol Educ Book.* 2021;41:38-46.