

ARTICLE

Distress Management Through Mind-Body Therapies in Oncology

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Abstract

Distress is highly prevalent in cancer survivors, from the point of diagnosis through treatment and recovery, with rates higher than 45% reported worldwide. One approach for helping people cope with the inherent stress of cancer is through the use of mind-body therapies (MBTs) such as mediation, yoga, hypnosis, relaxation, and imagery, which harness the power of the mind to affect physical and psychological symptoms. One group of MBTs with a growing body of research evidence to support their efficacy focus on training in mindfulness meditation; these are collectively known as mindfulness-based interventions (MBIs). Research supports the role of MBIs for dealing with common experiences that cause distress around cancer diagnosis, treatment, and survivorship including loss of control, uncertainty about the future, fears of recurrence, and a range of physical and psychological symptoms including depression, anxiety, insomnia, and fatigue. Growing research also supports their cost-effectiveness, and online and mobile adaptations currently being developed and evaluated increase promise for use in a global context.

Distress Prevalence and Screening

Distress has been defined by the National Comprehensive Cancer Network (NCCN) as “a complex, unpleasant emotional experience characterized by compromised psychological, social, and/or spiritual wellbeing” (1). The severity of distress can vary from “normal” feelings of vulnerability or sadness to episodes of major depression and anxiety disorders. In the United States, large-scale studies report clinically significant distress in 35–45% of all cancer patients and survivors (2,3). International survey studies of the prevalence of distress typically find that anywhere between 45% and 65% of patients fall over cutoff values for clinically significant distress, requiring specialized psychosocial care (e.g., Canada [4], Japan [5], China [6], Europe [7]). These rates typically vary by type and stage of cancer, progress along the treatment trajectory, age, sex, and other demographics.

Based on clinical trials exploring methods and outcomes of screening for distress programs, routine distress screening has become recommend clinical care and is now mandated as standard practice in many countries, including Canada and the

United States (8, 9). The goals of screening for distress programs are to accurately identify patients who are at low risk or fall within manageable levels of distress, vs those requiring additional support, and expeditiously direct patients to the appropriate evidence-based resources for treating identified problems. The process of implementing formalized “screening for distress” programs has also been studied, and six major components identified: 1) including psychosocial representation on the implementation committee; 2) determining the timing of screening; 3) determining the method and mode of screening; 4) choosing appropriate tools; 5) developing a process for assessment and referral; and 6) documenting screening results and referrals (8). Screening for distress programs have been implemented in many countries worldwide; a recent review identified 21 non-English translations of the Distress Thermometer (a commonly used distress screening measure), 18 of which had been tested and validated with cancer patients (10).

As listed above, one of the key components (and perhaps the most important element) of screening for distress programs is the referral of patients identified as suffering from distress and

other symptoms/problems to appropriate evidence-based treatments. This has been the major difficulty for many Screening for Distress programs as there may not be appropriate resources in the community for referrals. One branch of interventions in psycho-oncology that are commonly used, have been well-researched, are relatively low cost, are available in many countries globally, and can be simple to implement are mind-body therapies (MBTs) (11).

Mind-Body Therapies

MBTs have been defined as “a variety of techniques designed to enhance the mind’s capacity to affect bodily function and symptoms” (12). The most commonly studied techniques in cancer care that fall under this rubric are meditation, yoga, hypnosis, and imagery/relaxation (other modalities such as creative therapies and movement-based therapies like tai chi are also often included). Over the last 20 years, there has been an influx of interest and research into the benefits of MBTs for helping people with cancer cope with the symptoms and side effects of often gruelling treatments (11,13,14), including fatigue, pain, nausea/vomiting, sleep problems, distress, anxiety, and depression.

Yoga has been extensively studied, with many meta-analyses and review papers published that summarize this quite voluminous research (eg, 15,16). The consensus is that yoga can improve overall quality of life, emotional and social functioning, anxiety, depression, and distress with small to moderate effect sizes (16). Biomarkers have also been studied, with decreases observed in inflammatory markers including gene expression (17) and steeper cortisol slopes (which are thought to indicate healthier physiology) in yoga participants compared with usual care and control groups (18). As is the case with much research in this area, however, the quality of trial designs is variable, sometimes suffering from small sample sizes, selection bias, lack of follow-up, lack of active comparison groups, and a focus mostly on breast cancer patients and survivors.

Similarly, hypnosis (a natural state of aroused, attentive focal concentration coupled with a relative suspension of peripheral awareness aimed at achieving symptom relief) has also been tested for helping people with cancer. A review of all studies of hypnosis for cancer patients concluded that hypnosis is a viable means of reducing pain and anxiety without side effects, while allowing patients to play an active role in their comfort and well-being (19). Imagery and relaxation can generally be distinguished from hypnosis in that they are often self-administered and do not typically try to induce a trance state, but they are useful for treating the same types of symptoms as hypnosis. Guided imagery involves using the imagination to create a specific sensory experience to achieve a clinical goal, such as promoting overall well-being or treating specific symptoms. The National Comprehensive Cancer Network recommends both imagery and hypnosis as effective treatments for anticipatory nausea and vomiting (20). A review of more than 100 imagery studies found that compared with no treatment, imagery was more helpful for treating depression, anxiety, discomfort, and quality of life, but its effects were similar to other mind-body interventions such as hypnosis and relaxation alone (21).

Mindfulness-Based Interventions

Another well-studied MBT involves training in mindfulness meditation. Mindfulness itself is often defined as paying

attention in the present moment with nonjudgmental acceptance of experience. It consists of three main components: intention, attention, and attitude (22). Intention lightly directs the focus of practice, while attentional skills are trained through sustained practice of directing and redirecting attention to aspects of the present moment. All of this is done with attitudes of kindness and curiosity. Mindfulness is thought of as both a way of being in the world (one can be more or less mindful) and as a concrete practice (mindfulness meditation). One objective of the wide variety of mindfulness meditation practices is to enhance the ability to be more mindful in everyday life.

Within the realm of cancer care, my group and others have been applying principles of mindfulness, explicitly training people diagnosed with cancer in mindfulness meditation and assessing the effects of such training since the mid-1990s. There are several characteristics of a cancer experience that may cause distress and that are especially amenable to a mindfulness approach. A diagnosis often challenges the world view that life is predictable and controllable. On an existential level, people are forced to directly confront their own mortality, often for the first time. Substantial and potentially permanent changes in functional abilities, appearance, and lifestyle may follow, as well as having to face the possibility of ongoing pain and dysfunction. Life plans are usually altered, and the future is premised on whether or not the illness comes back or gets worse. After treatment, no matter how good the prognosis may be, for most there is a lingering fear of recurrence or progression, which turns every ache and pain into a potential life threat and can result in constant anxious monitoring. Mindfulness practices allow a short-circuiting of this process to prevent such escalation. Indeed, many of these common cancer-related problems are amenable to treatment through mindfulness training, which is especially helpful in dealing with uncontrollable, unpredictable, and emotionally charged life stressors.

Mindfulness-based interventions (called MBIs) are based on seminal work in the development of Mindfulness-Based Stress Reduction (MBSR), a structured eight-week group program developed by Jon Kabat-Zinn and colleagues in the 1970s. MBIs train the development of stable and kind mindful attention, through repetitive and consistent application of awareness of present-moment experience, with a kind, curious, and nonjudgmental attitude. This typically begins with training in focused attention on the breath or bodily sensation through body scanning, sitting meditation, and mindful movement. We have learned much about the feasibility and efficacy of these interventions in the last 40 years, across a wide range patients and outcomes including psychological, behavioral, physiological, and biological markers of health.

Review of the Literature

There is now a large body of work investigating the efficacy of MBIs for patients with various types of cancer. This literature itself has been reviewed repeatedly in the last decade (23–30). Two recent meta-analyses focused on breast cancer patients exclusively, reporting large effect sizes on stress ($d = 0.71$) and anxiety ($d = 0.73$) across nine studies with various designs (31) as well as small effects on depression ($d = 0.37$) and medium effects on anxiety ($d = 0.51$) in three RCTs (27). Another study examined 22 randomized and nonrandomized studies for people with all types of cancer and reported moderate effect sizes on anxiety and depression in nonrandomized studies ($d = 0.60$ and 0.42 , respectively) and slightly smaller effects for RCTs (29).

To provide some specific examples, in one of the few studies to compare an MBI with another active intervention in a comparative efficacy trial, the MINDSET trial directly compared mindfulness-based cancer recovery (MBCR) with another active group intervention for cancer support, Supportive Expressive Therapy (SET), and a minimal intervention control condition (a one-day stress management seminar) in more than 270 distressed breast cancer patients (32,33). Overall, women in MBCR improved more on stress symptoms compared with women in both the SET and control groups, they improved more on quality of life compared with the control group, and they improved in social support compared with the SET group (33). Over the longer-term follow-up of one year, the MBCR participants improved more than those in SET from pre- to postintervention in stress, mood, social support, quality of life, spirituality, and benefit finding, and these greater improvements were maintained over an entire year of follow-up (32). This suggests that the eight-week group provided longer-term protection from distress for these women compared with those who did not participate.

Another recent large study compared 155 women with breast cancer randomly assigned to an adapted MBSR program with 167 usual care controls, reporting greater improvement in the mindfulness group on anxiety, fear of cancer recurrence problems, and measures of fatigue severity and interference (34). This same group also assessed the cost-effectiveness of the interventions, showing better value for the same amount of improvement in quality of life compared with other behavioral and medical treatments in breast cancer (35). Other research groups in Europe are also currently investigating the cost-effectiveness of other MBIs in cancer care, and there is growing interest in developing online and app-based interventions.

Along that vein, we have developed an online version of the MBCR program that extends accessibility to anyone with a computer or smartphone and internet access (36). This study included a broad range of both men and women who could either be on active treatment or have completed treatment within the past three years, with any type of cancer. They all were experiencing at least moderate levels of distress. Our primary interest was feasibility: whether people would sign up and if they would complete the program and get any benefit. The participants attended each week for eight weeks at a set time like an in-person group, and they could see and interact with the instructor and the other participants in the online classroom. We enrolled 62 people, and 83% of those completed the program, with similar completion rates to in-person programs. All participants said the program either met (40%) or exceeded (60%) their expectations, and all said they would recommend the program to other cancer patients. There were statistically significant improvements and medium effect sizes in the online MBCR group relative to controls for scores of total mood disturbance, stress symptoms, and spirituality (37), again of similar magnitude to in-person groups. This work represents a promising direction in terms of broadening accessibility of MBTs through the use of modern technology.

Global Implications

As summarized above, distress due to cancer is a global phenomenon, present in people around the world suffering from cancer and its often debilitating treatments. Identification of distress is relatively straightforward, but there is a need to better treat distress once identified. The way this unfolds will vary across countries and regions, with a need to adapt to local

circumstances and resources. One family of interventions that may prove beneficial as well as portable and relatively adaptable is MBTs, including training in mindfulness meditation. There is growing work developing and testing online programs and mobile apps for mindfulness, and guided meditations have been developed that can be used during treatment sessions. Professionals from many backgrounds can be trained in the delivery of MBTs more generally, including relaxation and imagery, and program delivery is low cost.

Hence, there is great potential for reaching many people suffering with the worry and discomfort of cancer worldwide by developing and testing sustainable interventions that can be adapted in culturally meaningful ways. This is a fruitful avenue of research and development, ripe for pursuit by integrative oncology practitioners worldwide, and represents an opportunity to broaden our reach to further help underserved patients manage their symptoms and thrive beyond diagnosis and treatment.

Funding

Dr. Linda E. Carlson holds the Enbridge Research Chair in Psychosocial Oncology, cofunded by the Alberta Cancer Foundation and the Canadian Cancer Society Alberta/North West Territories Division. She is also an Alberta Innovates-Health Solutions Health Scholar.

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