

Use of Mindfulness-Based Stress Reduction in Cancer Patients

Date 2007/11/2 10:30:33 | **Topic:** AIMS News

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A report by Center for Disease Control cites that 1 in 7 Americans, approximately 25 million, suffer from chronic diseases such as cancer, heart disease and diabetes. This accounts for the loss of at least a third of their lives before the age of 65. A staggering 70% or more of the current healthcare cost is spent on treating these diseases and the co-morbidities associated with them, not to mention economic concerns of decreased in productivity and unequal burden on the workforce. 1, 2

The social and emotional burdens are no less debilitating. The disruption of social life, vocation and the accompanying uncertainty adds to the feeling of helplessness and isolation. This could add to the barriers to self-care and management the disease.

Most chronic illnesses are either accompanied by or followed by stress. It appears that people who manage the stress are more resilient, have fewer physiological manifestations, and have improved emotional and health-related quality of life. 3, 4

The diagnosis of a chronic disease such as cancer has profound implications on mortality and quality of life which is often compounded by the debilitating side-effects of treatments. Stress, anxiety and mood disorders were the most frequently reported psychological issues by cancer patients and were reported more often by women than men. 5, 6

Many complementary therapies such as meditation, acupuncture, yoga and energy work have been considered as a low-cost adjunct. Meditation, both transcendental and mindfulness-based, has been used for stress reduction and as an adjunct to medical therapies in chronic diseases. It is intended to increase self-awareness, cultivate the ability to manage response to stress, take better care of self and live a healthier life. 7

(Ott MJ). Mindfulness-Based Stress Reduction (MBSR) is a well-defined method of teaching people this skill and enhancing consciousness of each action without judgment. Developed by Jon Kabat Zinn, PhD at the University of Massachusetts in Worcester, it has been offered for over 20 years. The MBSR course consists of eight consecutive sessions which teaches the concepts of mindfulness, or being present to one's experience without judgment, as well as practices such as meditation, body awareness and basic yoga. The course also includes one all-day meditation practice between sessions six and seven. The MBSR course has been instituted in over 200 organizations worldwide and has been studied in patient, student and professional, populations. Mindfulness meditation is a process of purposefully paying attention to what is happening in the present moment without being distracted by what has already happened or what might happen.

It has been successfully utilized by and studied in diverse groups of patients regardless of their gender, education, socioeconomic status and ability to communicate in English. A study by Roth et al proved it was effective in reducing stress and improving health-related quality of life in bilingual, inner-city patient population. 9 Studies have consistently shown the MBSR programs improve quality of life, sleep, mood and decrease symptoms of stress and anxiety. 10, 11

Mindfulness Meditation in Cancer Patients

Two major reviews of current literature and meta-analysis on MBSR programs for cancer patients conclude that, in spite of variations in study design and population size, most studies demonstrated notable even if not significant improvements in sleep quality, mood, health-related quality of life and decrease in stress. 12, 13

The outcomes for most of these studies were measured using standardized instruments such as Profile of Mood States (POMS) and Symptoms of Stress Inventory (SOSI), European Organization for Research and Treatment

stress-related symptoms (physical, psychological and behavioral) and changes in mood and health-related quality of life.

Physiological measures such as heart and respiratory rate, blood pressure and levels of some stress and sleep related hormones such as cortisol, dehydroepiandrosterone sulfate (DHEAS) and melatonin were measured in some studies.

Mindfulness-Based Stress Reduction in relation to quality of life, mood, symptoms of stress and levels of stress and sleep related hormones in cancer patients:

Cortisol, the primary stress hormone is known to have immunosuppressive effects and is largely responsible for the downregulation of the immune function during stress. Its hypersecretion may also result in depressed mood. In addition to this, women with breast cancer are known to have elevated levels of cortisol before and after treatment. Abnormal patterns of cortisol have also been noted with women with metastatic breast and ovarian cancer. There is speculation that this abnormal cortisol secretion may represent a compromised Hypothalamic-pituitary-adrenal (HPA) axis resulting in poorer prognosis.

Meditation has been shown to be effective in reducing cortisol levels in healthy volunteers. In a study by Carlson et al, participation in the MBSR program was associated with some change in the pattern of cortisol secretion with and some non-significant shifts in DHEAS secretion patterns. This could imply that there may be a beneficial change in the HPA axis and hormone levels with MBSR which warrants further studies. 14

Mindfulness-Based Stress Reduction and Immune parameters in cancer patients:

Many studies have shown that cancer patients have compromised immune function, changes in the immune profile and the levels of certain cytokines such as interferon gamma. These have been used to predict disease progression. 15 Melanoma patients who received a 6 week-psychosocial intervention showed increase in the number of lymphocytes and natural killer cells, 6 months after intervention. Although this may imply delayed response and long-term effects, the reasons are not clearly understood. 16

In a study with 49 breast cancer and 10 prostate cancer patients who participated in an 8 week MBSR program, along with significant improvements in quality of life and sleep were decreases in symptoms of stress. The cytokine profile showed a shift away from that usually observed in cancer, cancer pain and depression. There was an increase in the anti-inflammatory cytokine levels that inhibit the growth of breast cancer cell lines. 17

Combination of Mindfulness Meditation and Diet on Prostate Specific Antigen Levels in Prostate Cancer:

A plant-based, high fiber, low saturated fat diet combined with exercise and MBSR slowed down the increase in PSA levels of patients after radical prostatectomy. Although this was a novel integrative plan which included mindfulness training and instruction in shopping, cooking and learning food awareness while eating as a part of the program, there were no control groups to pinpoint which factors influenced the outcomes. Dietary fiber, exercise and decreased body weight appeared to be specific predictors of these outcomes. 18

Mindfulness Meditation at the bedside:

Although most studies were done in groups on outpatients, mostly with breast and prostate cancers, a study was conducted on a small population of hospitalized patients with cancer diagnosis and undergoing cell/bone marrow transplant. They received one-on-one sessions for 45 minutes, twice a week throughout hospitalization and showed statistically significant differences in relaxation, pain, happiness, comfort, heart and respiratory rates. This was published as an abstract/commentary by Bauer-Wu et al but is a glimpse into the possibilities at

Teaching patients the skill of managing their response to stress and illness inside the hospital and outside is probably the foundation for the culture of self-care we hope to create and a platform for the cost-effective, long-term solution we need.

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SOURCE: http://www.umdj.edu/icam/newsletter/index_item5.htm

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