

## RESEARCH ARTICLE

# Impact of Integrative Restoration (iRest) Meditation on Perceived Stress Levels in Multiple Sclerosis and Cancer Outpatients

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### Summary

Stress is a common occurrence in many chronically ill patients, and researchers are calling for cost-effective stress-reduction interventions. Meditation techniques have demonstrated a host of benefits for chronically ill patients. The present study examined the effects of a 6-week Yoga Nidra meditation programme on perceived stress in multiple sclerosis and cancer patients. Overall stress was significantly reduced over the course of the programme. Copyright © 2009 John Wiley & Sons, Ltd.

### Keywords

meditation; cancer; multiple sclerosis; perceived stress

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## Introduction

Receiving a diagnosis of a chronic illness such as cancer or multiple sclerosis (MS) can be very stressful for both the patients and their families (Andrykowski, Lykins, & Floyd, 2008; Bonadonna, 2003; Matchim & Armer, 2007; Ott, Norris, & Bauer-Wu, 2006; Praissman, 2008; Vera, 1999). Not surprisingly, some studies suggest that patients with MS (Sorenson, Janusek, & Mathews, 2006) and cancer (Roberts, Cox, Shannon, & Wells, 1994) score significantly higher on stress measures than do control participants. Furthermore, stressful life experiences may intensify symptoms and survival rates in both MS (Brown et al., 2006; Mohr, 2007; Sorenson et al., 2006) and cancer patients (Chida, Hamer, Wardle, & Steptoe, 2008). Given the negative effect stress has on the immune system (Coker, 1999), it is perhaps not surprising that 78 per cent of MS patients report that stress intensifies their symptoms (Simmons, Ponsonby, van der Mei, & Sheridan, 2004).

Given the connection between stress and symptomatology in cancer and MS patients (Brown et al., 2006; Chida et al., 2008; Sorenson et al., 2006), researchers are beginning to investigate ways to reduce stress in these patients, particularly non-invasive cost-effective treatments. Meditation is a safe, cost-effective treatment that can be utilized throughout the process of coping with a chronic illness such as cancer (Coker, 1999; Matchim & Armer, 2007; Ott et al., 2006; Praissman, 2008). Mindfulness meditation (where one focuses on the present moment with an attitude of acceptance) has been shown to have a host of benefits, including stress reduction for patients with a variety of chronic illnesses (Bonadonna, 2003; Praissman, 2008), such as cancer outpatients (Bonadonna, 2003; Carlson & Garland, 2005; Coker, 1999; Praissman, 2008; Specia, Carlson, Goodey, & Angen, 2000; Tacón, Caldera, & Ronaghan, 2004). These benefits likely occur because meditation leads to a decrease in blood flow to the parts of the brain controlling executive function, and to an

increase in theta wave activity and melatonin production (Coker, 1999; Lou & Kjaer, 2005; Lou et al., 1999). Meditation has also been shown to increase endogenous dopamine release, leading to a sensation of 'reduced readiness for action' (Kjaer et al., 2002; Lou & Kjaer, 2005). As a result, meditation has become an accepted and credible intervention for patients with chronic illnesses (Baer, 2003), including cancer and MS (Bonadonna, 2003; Ott et al., 2006). In fact, MS (Esmonde & Long, 2008; Mills & Allen, 2000; Simmons et al., 2004) and cancer patients (Coker, 1999; Mackenzie, Carlson, Munoz, & Speca, 2007; Tacon et al., 2004) report meditation improves their symptomatology. Furthermore, these patients continue to use these techniques long term. For example, 88 per cent of women diagnosed with breast cancer who were taught mindfulness-based stress reduction (MBSR) were still practising those techniques 3 months later (Tacon et al., 2004).

### Hypothesis

Similar to MBSR, Yoga Nidra is a state of meditation and complete relaxation where the consciousness of the sensory world around us and the consciousness of our actions dissociate. This dissociation results in a relaxed state of mind where it is possible to withdraw from the sensory world and not wish to do anything about those sensations (Baer, 2003; Bonadonna, 2003; Kjaer et al., 2002; Lou & Kjaer, 2005; Miller, 2005; Praissman, 2008). Thus, the meditator becomes a non-judgemental observer of his or her reality (Baer, 2003; Bonadonna, 2003; Kjaer et al., 2002; Miller, 2005; Praissman, 2008; Wahbeh, Elsas, & Oken, 2008). However, unlike MBSR, Yoga Nidra does not utilize yoga postures, which can sometimes be difficult for patients with painful or restricted movements caused by certain types of chronic illness. Instead, Yoga Nidra begins with a comprehensive body scan that can be carried out in any physical orientation (sitting, laying down or standing), which Cassileth (1999) recommends cancer patients to use to help relieve stress and anxiety. In addition, unlike MBSR, Yoga Nidra encourages participants to explore sensations, emotions and thought patterns; moving back and forth between feeling and witnessing; and allowing both to reside simultaneously in awareness. This practice of 'welcoming opposites' produces a remarkable 'shift' in perspective for the practitioner, and makes it successful for people experiencing some

sort of physical or psychological issue such as MS, chronic pain, trauma, etc. (Miller, 2005).

Although previous research has established the helpfulness of MBSR (e.g. Baer, 2003; Bonadonna, 2003; Praissman, 2008), more research in this area needs to be conducted (Ott et al., 2006). Furthermore, although Yoga Nidra has been shown to reduce anxiety and hostility (Bhushan & Sinha, 2001), little is known about its ability to reduce stress levels.

## Method

### Participants

A total of 22 patients participated: 10 cancer patients and 12 MS patients. Cancer patients were recruited from the Mountain States Tumor Institute; MS patients were recruited by the local MS Society. There were no restrictions placed on the type or stage of cancer or MS or on the prognosis. To be eligible for the post-test, participants needed to attend five of the six sessions.

### Measure

#### Perceived Stress Scale

The Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) is a widely used and accepted instrument to assess stress that has been used successfully in patients with MS (Sorenson et al., 2006) and cancer (Golden-Kreutz, Browne, Frierson, & Andersen, 2004). The PSS consists of 10 self-rated items that ask participants to assess their stress over the past month (e.g. 'In the last month, how often have you been upset because of something that happened unexpectedly?'). Items are scored on a scale from '0 = never' to '4 = very often'. Scale scores are computed by summing the items ( $\alpha = 0.86$  for the pre-test,  $\alpha = 0.89$  for the post-test).

### Procedure

Patients at the MS Society and Mountain States Tumor Institute were informed of the Yoga Nidra study and were invited to participate. One class was held for cancer patients at the Mountain States Tumor Institute, and one class was held for MS patients at a local yoga studio. Interested students were screened based on their ability to make at least five of the six sessions in each class. Each class was limited to 12 participants on a

first-come, first-served basis. Informed consent was obtained, and the pre-test was completed at the first session prior to the Yoga Nidra practice initiation. Participants were asked to read the instructions for the survey and to answer to the best of their ability. The post-test was administered at the last session following the Yoga Nidra instruction. Participants were thanked for their involvement.

### Overview of the Yoga Nidra programme

The Yoga Nidra programme is an ongoing programme supported by both the MS Society and the Mountain States Tumor Institute. The programme followed that suggested by Miller (2005), with further suggestions by Miller (pers. comm.; see Miller, 2005 for a description of the programme). Classes were 90 min and were held once a week for 6 weeks. Foundations of the Yoga Nidra meditation programme were discussed at the first session. Students were given two CDs containing two different meditation practices during the course of the 6-week programme so that they could practise at home as well. These include the body scan meditation; breath work; exploration of sensations, emotions and thought patterns; moving back and forth between feeling and witnessing; and sitting in awareness. Yoga mats, blankets and eye pillows were provided for in-class use. Participants were asked to practise once a day at home in addition to the weekly class.

### Data analysis

Sum scores on the PSS for all participants were analysed using a repeated-measures analysis of variance, with stress as the within-participants variable and participant type (cancer versus MS) as the between-participants variable to detect significant changes over the course of the programme. Only 7 of the 10 cancer patients and 9 of the 12 MS patients completed both the pre-test and the post-test; thus, analyses were based on 16 participants.

### Results

As displayed in Table I, participants reported significantly lower levels of perceived stress at the completion of the 6-week programme [ $F(1, 14) = 21.48, p < 0.001$ ]. However, there was no effect of sample (cancer versus MS) [ $F(1, 14) = 0.86$ ] nor any interaction between time and sample [ $F(1, 14) = 1.22$ ].

**Table I.** Mean (standard deviation) Perceived Stress Scale scores pre- and post-Yoga Nidra intervention by sample

Sample	Pre-test	Post-test
Cancer	17.00 (6.22)	12.28 (5.85)
Multiple sclerosis	21.22 (6.04)	13.56 (7.38)

### Discussion

Similar to previous research on the helpfulness of MBSR to patients with chronic illness (e.g. Baer, 2003; Bonadonna, 2003; Praissman, 2008), results of the present study confirmed that meditation is an effective stress-reduction technique for cancer and MS patients. In particular, the present study was the first of its kind to investigate the impact of Yoga Nidra meditation on stress reduction in chronically ill patients. The confirmation that Yoga Nidra is an effective stress-reduction technique for cancer and MS patients is very important to those patient groups. Yoga Nidra, as practised by the Miller group, is easier to perform than MBSR for many chronically ill patients with restricted physical capabilities. It is important to discover that yoga postures themselves (as a component of MBSR) are not necessary to obtain the stress-reduction benefits of a mindfulness-type meditation programme.

This study has several methodological limitations that warrant mention. Firstly, as this was a pilot study, there were a limited number of participants allowed in the classes (12 per class), and not all participants completed both the pre-test and the post-test. Secondly, as this was a pilot study, there was no control group component to the study. Thus, it is not possible to ascertain whether stress-reduction benefits would have occurred over time without the aid of the Yoga Nidra meditation programme. Future studies should include a control group when assessing the effectiveness of the Yoga Nidra programme. Finally, although the present study was able to demonstrate a trend towards reduction in perceived stress over time, because we did not assess the impact of this reduction on participants' quality of life, it is difficult to ascertain the practical implications of the stress reduction. Future studies should examine quality of life over the course of the programme in addition to specific symptomology reduction.

Despite these limitations, it appears that Yoga Nidra meditation may have a positive impact on cancer and MS patients. As the study was open to patients regardless of their type and stage of diagnosis, this further

strengthens the potential usefulness of Yoga Nidra in chronically ill patients. As Yoga Nidra is a relatively inexpensive and seemingly effective intervention, future studies should investigate the long-term benefits that Yoga Nidra may provide to cancer and MS patients.

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