

## Editorial

# Mindfulness-Based Therapy for Chronic Insomnia

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## INTRODUCTION

Insomnia is the most prevalent sleep disturbance reported worldwide. Ten to fifteen percent (~32 to 48million) of the US population suffer from chronic insomnia [1,2]. This equates to approximately 730 million to 1.1 billion sufferers worldwide. Chronic insomnia is particularly a problem in those with physical and/or mental illness, females, and the elderly [1,2]. Those experiencing persistent insomnia report poor health outcomes, diminished quality of life, and increased health care expenditures [2]. Reduced productivity resulting from chronic insomnia is costing the US workforce \$63.2 billion annually. An additional \$32 billion is spent by US consumers each year in the “sleep market” (e.g. hypnotics, sleeping masks, white noise devices) [3,4].

Current practice guidelines for the management of chronic insomnia call for combining sleep restriction, stimulus regulation, sleep hygiene, relaxation practices, cognitive behavioral therapy, and pharmacotherapy for underlying health problems (e.g. depression, anxiety disorders, chronic pain) to combat poor sleep behaviors and beliefs[2]. Unfortunately, many patients remain untreated, do not achieve full remission, or chronically take hypnotics without addressing the root cause of their sleep disturbances.

Inadequate relief of insomnia symptoms has increased the use of complementary and alternative medicine (CAM) practices including acupuncture, massage therapy, diaphragmatic breathing, stress management, herbal remedies, dietary supplements, and mind-body techniques such as mindfulness, meditation, yoga, Tai Chi, and Qi Gong. Research using the 2007 National Health Interview Survey has found that 45% of US adults with insomnia symptoms report using 1 or more CAM therapy annually [5].

Mindfulness meditation stems from Buddhist traditions dating back 2,500 years and presents a promising option for treatment of insomnia. Participants are taught to use nonjudgmental awareness while paying attention to the present moment in order to promote calmness and relaxation of the mind-body. Mindfulness-based programs have emerged as novel approaches to insomnia, chronic pain management, behavior modification, stress/anxiety reduction, addiction, and relapse prevention. The first formal program, mindfulness-based stress reduction (MBSR), was created by Jon Kabat-Zinn over 2 decades ago [6]. Several programs have evolved from MBSR including

mindfulness-based cognitive therapy (MBCT), mindfulness-based relapse prevention (MBRP), mindfulness-based therapy for insomnia (MBTI) and, mindfulness-based pain management (MBPM). Mindfulness techniques target the same cognitive patterns that perpetuate insomnia such as attitude and attention towards sleep disturbances, rumination, persistent worries, and avoidance behaviors. Research using mindfulness practice for insomnia is emerging and encouraging [7-13].

Ong and colleagues recently published a randomized controlled trial that involved 54 adults (mean age 43 years old) with chronic insomnia. Participants were randomized into 3 study arms, each over 8-weeks: 1) MBSR 2.5 hours each week plus one 6-hour retreat, 2) MBTI 2.5 hours each week, or 3) self-monitoring (SM) control using daily sleep/wake and weekly pre-sleep arousal scale (PSAS). Those enrolled in MBSR or MBTI were instructed to maintain a home meditation practice for 30-45 minutes 6 or more days each week and document their time spent using a meditation diary in addition to their sleep diary. Additionally, MBSR and MBTI participants were provided with Kabat-Zinn's book entitled, *Full Catastrophic Living*, and a CD with guided meditations for use in their home practice regimen [16].

The study utilized the standard research guidelines for assessment of insomnia including sleep onset latency (SOL), wake after sleep onset (WASO), number of awakenings (NWAK); total sleep time (TST), time in bed (TIB); pre-sleep arousal scale (PSAS), and insomnia severity index (ISI). Additionally, sleep was objectively measured via polysomnography (PSG) testing and wrist actigraphy. Sleep efficacy (expressed as a percent) was defined as  $TST / TIB \times 100$  and total wake time, the primary outcome measure, was calculated as  $SOL + WASO$ .

There were significant reductions in TWT in the MBSR and MBTI cohorts as compared to SM. Those who meditated averaged 43.75 fewer minutes of TWT compared to 1.09 minutes for SM. Significantly larger reductions in ISA (4.56 vs 0.06) and PSAS (7.13 vs 0.16) baseline-to-post were found in the meditation-based cohorts compared to SM. At the 6-month follow-up MBTI showed greater reductions ( $p < 0.05$ ) in ISI scores than MBSR, as well as, the highest remission rates (50%) and treatment response (78.6%). No significant findings were reported for PSG-based sleep parameters. Two actigraphy-measured variables (TWT and TST), however, were reported as significant in the MBSR and MBTI study arms.

Overall, the authors reported that mindfulness meditation reduced sleep arousal at a rate higher than SM improving nocturnal symptoms and waking distress. MBTI had a significantly larger reduction in disease severity (via ISI) compared to MBSR indicating that individualized mindfulness meditation program using behavioral strategies (MBTI) for sleep has enhanced long-term benefits when compared to the standard mindfulness meditation program (MBSR) without behavioral interventions.

The above mentioned findings report significantly positive outcomes using mindfulness-based programs for the treatment of chronic insomnia. Larger studies are needed to help validate this data. Increased numbers of available MBTI practitioners are essential in order to individualize care and improve patient outcomes. A registry of over 600 MBSR trained instructors is available in the US and number of mindfulness courses (in person and internet-based) is increasing worldwide [15]. MBSR and MBTI programs address hyper arousal and ruminating thought patterns known to perpetuate insomnia and are not associated with adverse effects. Chronic use of sedative hypnotics should be avoided if possible as they can cause significant side effects (e.g. changes in cognition, sleep driving, and memory loss), reduce quality of life, and do not address the root causes of a patient's insomnia. Given the efficacy of mindfulness-based programs reported to date, practice guidelines and policy should consider MBSR and MBTI as viable treatment options for patients with chronic insomnia.

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