Mindfulness-Based Stress Reduction for Chronic Insomnia in Adults Older than 75 Years: A Randomized, Controlled, Single-Blind Clinical Trial

Jia-xu Zhang, MD[†,1,2] Xiao-hui Liu, MD[†,1] Xin-hui Xie, MD[1,3,4#] Dan Zhao, MD[5] Mo-shui Shan, MD[1,6] Xi-liang Zhang, MD[7] Xiao-ming Kong, MD[3] and Hong Cui, MD, PhD[1#]

Objective: To assess the effectiveness of mindfulness-based stress reduction (MBSR) for chronic insomnia and combined depressive or anxiety symptoms of older adults aged 75 years and over.

Design: A randomized, controlled, single-blind clinical trial.

Patients and Methods: Participants included 60 adults aged 75 years and over with chronic insomnia. Participants were randomly assigned to the eight-week MBSR group or the wait-list control group. Assessments using the Pittsburgh Sleep Quality Index (PSQI), Self-rating Anxiety Sale (SAS), and Geriatric Depression Scale (GDS) were taken at baseline and post-treatment. For each outcome measure, a repeated measures analysis of variance was used to detect changes across assessments.

Results: There was a significant time × group interaction for the PSQI global score ($P = .006$); the MBSR group had a decrease in the PSQI global score (Cohen's $d = 1.12$), while the control group did not (Cohen's $d = -0.06$). Among the PSQI components, there was a significant time × group interaction for daytime dysfunction ($P = .048$); Cohen's d of the MBSR group was 0.76, while Cohen's d of control group was −0.04. There was no significant time × group interaction for the SAS score ($P = .116$), while for the GDS there was a significant time × group interaction ($P = .039$); the Cohen's d value for the MBSR group was 1.20, and it was 0.12 for the control group.

Conclusion: This study demonstrated that the MBSR program could be a beneficial treatment for chronic insomnia in adults aged 75 years and older.

Key words: Mindfulness, chronic insomnia, depression, anxiety, old age

INTRODUCTION

Chronic insomnia is defined as having difficulty initiating or maintaining sleep and waking very early or waking without feeling restored, and it is accompanied by daytime dysfunction.[1,2] Insomnia is widespread[3]; about 10% of adults in the United States experience it, and 9.2% of adults have it in China, with higher rates among women, clinical populations, and especially older adults.[4–7] Approximately 50% of elderly people suffer from insomnia.[8] Symptoms of insomnia have been described among the elderly, worldwide. Chronic insomnia is associated with many comorbidities; the most common psychological comorbidities are anxiety and depression, which can lead to impaired quality of life,[4,9–11] and for the elderly, impairments caused by insomnia are more serious. Chronic insomnia may also lead to increasing healthcare payments, which could be an enormous cost for the elderly.[12] Recent data also suggests a strong link between insomnia and symptoms of both depression and anxiety.[13] Compared with controls, people with insomnia have shown higher levels of depression or anxiety.[14] In addition, a significant connection was found between insomnia and mental disorders, such as depression and/or anxiety, among elderly people.[15,16]

1 Medical Psychology Division, Chinese PLA General Hospital & Medical School PLA, Beijing, China
2 Navy Fengtai Retired Cadres Sanatorium, Beijing, China
3 Department of Psychiatry, Anhui Mental Health Center, Hefei, Anhui, China
4 Department of Psychiatry, Shenzhen Key Laboratory of Psychological Health Center, No. 1080 Cuizhu Road, Luohu, Shenzhen, China
5 Department of Psychology, Shaanxi Normal University, Xi'an, China
6 215 Clinical Department, PLA Dalian Sanatorium, Dalian, Liaoning, China
7 General Surgery Department, Navy General Hospital, Beijing, China
† These authors contributed equally to the manuscript.
# *Corresponding authors at:* 1. Hong Cui: Medical Psychology Division, Chinese PLA General Hospital & Medical School PLA, Beijing, China; 2. Xin-hui Xie: Department of Psychiatry, Anhui Mental Health Center, Hefei, Anhui, China; and Department of Psychiatry, Shenzhen Key Laboratory of Psychological Health Center,No.1080 Cuizhu Road, Luohu, Shenzhen, China.
e-mail: xxh.med@gmail.com; xiexinhui@gmail.com; cuih@sina.cn; hongcui@301hospital.com.cn

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Mindfulness-based stress reduction (MBSR), cognitive behavioral therapy, pharmacotherapies, and some other therapies have been developed for chronic insomnia and shown to be robustly effective. Due to their convenience, doctors have preferred pharmacotherapies,[17] while patients prefer behavioral therapies.[18,19] Several meta-analyses have shown that middle-aged adults with insomnia may benefit from interventions based on CBT.[20–22] A Cochrane systematic review also showed that cognitive behavior therapy (CBT) may have a mild effect on older adults suffering from insomnia.[23]

In 1979, Jon Kabat-Zinn created the MBSR program; similar to behavioral therapy, the MBSR program was used to alleviate the stresses of living with chronic illness.[24,25] The program teaches the participants to focus their attention using a series of meditative skills; MBSR is a structured group program, which involves the cultivation of open, curious, and non-judgmental awareness of present moment experience. The MBSR program includes different forms of mindfulness meditation practices, including body scan, sitting meditation, mindful yoga, and sitting and walking meditations. A key component of MBSR is that participants should incorporate mindfulness into everyday life.[26] Participants are taught to perceive their immediate emotional and physical state. The MBSR had shown beneficial effects in some patients, including reductions in depression, anxiety, pain, psychological distress, etc.[27] The exercise of mindfulness helps people to skillfully deal with stressors with appropriate actions by "breaking up" cycles of worry and rumination, which means that mindfulness training could improve their sleep quality.[28] MBSR is the most commonly used mindfulness-based intervention.[29] Because of its simplicity and effectiveness, it has been widely used to treat insomnia or as an adjunct therapy, and it has been reported to significantly and efficiently improve sleep quality in several types of patients, such as cancer patients,[30,31] recipients of organ transplants,[32,33] and other patients with medical or psychiatric illnesses.[34] Two studies of mindfulness-based cognitive therapy (MBCT) also reported improved sleep quality in patients suffering from mood and anxiety disorders.[33,35] Mindfulness tells people to be patient to their physical and mental condition of the moment and have a peaceful coexistence with them, trust themselves, believe in their own wisdom and ability, and let all sorts of good and evil go, all these mindfulness practice could be good to insomnia. It helps them to know that insomnia could be overcome and enhance their confidence. In addition, a recent meta-analysis demonstrated that mindfulness-based therapies could play a useful role in treating anxiety and mood disorders.[36] Therefore, we suggest that MBSR could also be efficient for insomnia in elderly patients. However, relevant clinical trials are still insufficient, especially since this is the first randomized control trial for adults aged 75 years and older.

Research Objective

The present study is a randomized, controlled, single-blind clinical trial conducted to evaluate the efficacy of MBSR for chronic insomnia in adults aged 75 years and older. We hypothesized that MBSR would be an effective treatment for insomnia in elderly patients and may also reduce symptoms of anxiety and depression.

METHODS

Ethics

The study protocol was approved by the institutional review panels of PLA General Hospital, and all patients gave written informed consent.

Design

Our study was a two-group randomized, controlled, single-blind clinical trial. Participants were randomly assigned to the MBSR group ($n = 30$) or the wait-list control group ($n = 30$) by using computer-generated randomization schedules. Outcomes were measured at two time points: baseline and again, at the end of the intervention period.

Participants

Participants were recruited through advertisements, flyers, and by clinician referral between November 2011 and February 2013.

Inclusion Criteria

The following were the inclusion criteria: (1) age >75 years, (2) fulfill the Diagnostic and Statistical Manual of Mental Disorders: the Fourth Edition (DSM-IV)[37] criteria for insomnia, (3) insomnia duration of at least six months, and (4) complaints of impaired daytime functioning.

Exclusion Criteria

The following were the exclusion criteria: (1) presence of other mental disorders; (2) presence of other serious physical illnesses; (3) dementia; (4) previous training history that used contemplation, meditation, or Zen training; and (5) bedridden or otherwise unable to attend the MBSR program.

A 30-min interview was conducted by a clinical psychiatrist and a physician to ensure that participants fulfilled the basic criteria for inclusion. Accepted participants ($n = 60$) were gathered at the Department of Psychiatry, PLA General Hospital, for a structured clinical interview (SCID-I) screening by two psychiatrists. Participants were assigned to either the experimental or control group based on a preset computer-generated randomization schedule. The flowchart in Figure 1 illustrates the design of this study.

Assessment

Pittsburgh sleep quality index (PSQI). The PSQI was compiled by Buysse et al. in 1989 and was used in this study to assess the subjects' sleep quality in the last month of the study.[38] This 19-item questionnaire is widely used as an outcome measure in insomnia; it covers qualitative (sleep quality, daytime fatigue, etc.) and quantitative (sleep latency, total sleep time, etc.) aspects of sleep and delivers both an overall (global) score and domain-specific component scores. The global PSQI score ranges from 0 to 21, with higher scores indicating an increased severity of sleep disturbance. Global PSQI scores are calculated as the sum of component scores for seven domains: sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbance, use of medication, and daytime dysfunction. The PSQI was subjected to a reliability and validity test by Chinese scholars—the boundary line is 7.

Self-rating anxiety scale (SAS). The SAS was compiled by Zung in 1971 and was used to assess the patients' subjective