

PRESS RELEASE

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Counting sheep and still awake? Mindfulness therapy may help bring on the zzzz's

Researchers from the Centre for Sleep and Cognition at the NUS Yong Loo Lin School of Medicine found mindfulness-based therapy to be more effective than an active sleep hygiene programme in improving sleep quality. This study is the first preregistered and adequately powered trial to test sleep-targeted mindfulness-based therapy as a treatment for insomnia.

Sleep problems are common in the general population with up to half of Singaporean adults reporting insufficient or unsatisfying sleep. Sleep quality tends to worsen with age and poor sleep is a modifiable risk factor for multiple disorders, including cardiovascular disease and cognitive impairment.

Currently, insomnia is treated with either medication or psychological interventions. However, even frontline treatments such as cognitive-behavioural therapy have limitations – up to 40% of patients do not get relief from their insomnia symptoms after undergoing this treatment. Furthermore, in Singapore, the waiting time to receive such treatment is long, as it is typically delivered as individual therapy and there are limited available local providers.

To search for alternative approaches to treat insomnia, Principal Investigator Assistant Professor Julian Lim from the Centre for Sleep and Cognition at the National University of Singapore's (NUS) Yong Loo Lin School of Medicine, together with the Singapore General Hospital's Department of Psychology, looked towards mindfulness-based treatment. Mindfulness is the awareness of moment-to-moment thoughts, feelings, and bodily sensations, and the practice of accepting these experiences without judging or reacting to them. Backed by scientific evidence^{1,2}, practicing mindfulness is becoming increasingly popular as a means to reduce stress, treat mental health problems, and improve general well-being.

The randomised controlled study compared a Mindfulness-Based Therapy for Insomnia (MBTI) with an active Sleep Hygiene, Education, and Exercise Programme (SHEEP) to see if the former could improve sleep outcomes in older adults with sleep complaints. A total of 127 participants, aged 50-80, were randomised and allocated between the two programmes – 65

¹ Goldberg et al. (2018) Mindfulness-based interventions for psychiatric disorders: A systematic T review and meta-analysis. *Clinical Psychology Review* 59:52-60

² Van Agteren et al. (2021) A systematic review and meta-analysis of psychological interventions to improve mental wellbeing. *Nature Human Behaviour*, 5: 631-652

received MBTI while 62 went through SHEEP. Both interventions consisted of eight weekly sessions which were of two hours duration each.

The MBTI course included formal mindfulness exercises such as mindful eating, sitting meditation, mindful movement and body scans. This was followed by a group discussion of their experiences during the past week, as well as the application of practices and principles of mindfulness which directly addressed their sleep difficulties. In addition, participants were taught good sleep habits and behavioural strategies that they could use to improve their sleep.

On the other hand, the SHEEP course provided participants with information about sleep biology, self-monitoring of sleep behavior and taught changes to make in their habits and environment that could improve sleep quality. Participants also learned and practised sleep-promoting exercises such as diaphragmatic breathing, morning and evening stretching movements, and progressive muscle relaxation.

Although sleep quality improved across the board, the study found MBTI to be more effective in reducing insomnia symptoms than SHEEP. Additionally, MBTI led to observable improvements when sleep was measured objectively – using wrist-worn activity monitors, and by recording electrical brain activity while participants slept at home. These objective measurements showed that MBTI participants took less time to fall asleep, and spent less time awake during the night, while this was not seen among SHEEP participants.

Explaining the study's findings, Assistant Professor Julian Lim said: "Insomnia is strongly linked to hyperarousal, or a failure to switch off the "fight-or-flight" system when it's time to sleep. It typically starts because of a triggering stressful event, and persists because some individuals go on to develop bad sleep habits and dysfunctional thoughts about sleep. MBTI uses behavioural strategies to address the bad sleep habits directly, such as encouraging people to get out of bed if they have difficulty sleeping to rebuild the association between the bed and good sleep, and mindfulness techniques to equip people with more flexible strategies to deal with the dysfunctional or arousing thoughts."

Assistant Professor Lim added, "The demonstration of the Mindfulness-Based Therapy as a viable treatment for insomnia presents possible valid alternatives for people who have failed or have no access to standard frontline therapies. Such treatment can be delivered in groups within and outside of a medical setting, providing members of the public with sleep issues easier and more efficient access to seek help."

The study has been reported in the journal *Psychological Medicine* on 1 July 2021, and was funded by the Singapore Millennium Foundation, the Far East Organization, and start-up funding from Duke-NUS Medical School and NUS.

The Centre for Sleep and Cognition at the NUS Yong Loo Lin School of Medicine studies the scientific underpinnings of human behavior and ways to improve sleep. Through research and advocacy efforts, the Centre seeks to enhance human cognitive potential as well as to reduce the impact of lifestyle factors and neurodegenerative diseases on cognition and well-being.

Access the full paper here: <https://www.cambridge.org/core/journals/psychological-medicine/article/mindfulnessbased-therapy-for-insomnia-for-older-adults-with-sleep-difficulties-a-randomized-clinical-trial/B7FB38A61EA1DA64EBF9C91CFCC3B20A>

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Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, 30 university-level research institutes, research centres of excellence and corporate labs focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research and cybersecurity.

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Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through its doors.

In our pursuit of health for all, our strategic research programmes focus on innovative, cutting-edge biomedical research with collaborators around the world to deliver high impact solutions to benefit human lives.

The School is the oldest institution of higher learning in the National University of Singapore and a founding institutional member of the National University Health System. It is Asia's leading medical school and ranks among the best in the world (Times Higher Education World University Rankings 2021 by subject and the Quacquarelli Symonds (QS) World University Rankings by Subject 2021).

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