

Editorial

The Landscape of Current Meditation Research: An Overview to the Special Issue on ‘Health Benefits of Meditation’

Soo Liang Ooi, Sok Cheon Pak *

School of Biomedical Sciences, Charles Sturt University, Panorama Avenue, Bathurst, NSW 2795, Australia; E-Mails: sooliangooi@gmail.com; spak@csu.edu.au

* **Correspondence:** Sok Cheon Pak; E-Mail: spak@csu.edu.au

Academic Editors: Sok Cheon Pak and Soo Liang Ooi

Special Issue: Health Benefits of Meditation

OBM Integrative and Complementary Medicine
2019, volume 4, issue 2
doi:10.21926/obm.icm.1902033

Received: May 29, 2019

Accepted: May 29, 2019

Published: May 31, 2019

Keywords

Meditation; mindfulness; yoga; zen; depression; anxiety; stress; resilience; immune system

The word “meditation” has its Latin root in *meditari*, which means “to contemplate, ponder, or reflect”. In modern-day terminology, meditation is often used to refer to a broad range of self-directed mind-body practices that typically involve complex emotional and attentional regulation to achieve calmness of the mind and relaxation of the body. These practices include mindfulness meditation, Transcendental meditation, Zen meditation, Vipassana, Loving-kindness meditation, Yoga, Qigong, and Tai Chi, to name a few. Many of them originate from Eastern philosophies and cultures. Yoga, for example, is an Indian contemplative tradition for achieving physical, mental, emotional, and spiritual harmony that has been practised for almost 5000 years [1]. In many cultures, meditation is also practised to promote healing forces within the mind and body [2]. Most notable is Qigong which incorporates various exercises such as postures, movements, sounds, breathing techniques, and sitting meditation, to mobilise the body’s vital energy or Qi for self-healing [3].



© 2019 by the author. This is an open access article distributed under the conditions of the [Creative Commons by Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium or format, provided the original work is correctly cited.

The scientific study of meditation as a therapeutic means, however, is only a recent phenomenon which began in the 1970s. The study by Benson on the potential of meditation as a therapy for systemic hypertension [4] and the study of mindfulness meditation as a stress reduction and relaxation technique for chronic pain patients by Kabat-Zinn [5] were among seminal works that sparked interest in this field. The convergence of meditation research with neuroscience since the turn of the current millennium has provided a much-needed scientific basis for better understanding underlying mechanisms of meditation on brain function. The work of Davidson and Lutz in early 2000 confirmed the neuroplasticity effects of meditation [6]. Meditation was subsequently found to induce growth in the cortical area of the prefrontal cortex, a region of the brain associated with complex cognitive behaviour, personality expression, decision-making, and moderating social behaviour. Decreased cerebral blood flow to the prefrontal cortex can potentially lead to several neurological conditions, including schizophrenia, bipolar disorder, and major depressive disorder. Hence, through enhancing the plasticity of the prefrontal cortex to promote self-healing and positive health, meditation helps to achieve emotional and neurological regulation and resilience [7].

There is a tremendous growth of interest in meditation research over the last couple of decades. A search on the PubMed with the keywords “Meditation OR Mindfulness” found over 9000 related publications since the year 2000, with over 60% of these publications published within the last five years. With the explosive growth in research, evidence has emerged to support a myriad of health benefits associated with the practice of meditation. The psychological benefits of meditation include reduction in stress, anxiety, depression, as well as improved memory and increased brain efficiency with sustained attention. Meditation is also known to induce physiological benefits such as lowering blood pressure, heart rate, epinephrine, metabolism, breathing pattern and increased melatonin. Pain, which has both psychological and physiological dimensions, can also be alleviated with the practice of meditation [8]. Not surprisingly, meditation, especially mindfulness-based programs, has enjoyed unprecedented societal interest and is becoming increasingly mainstream [9].

It is against such a backdrop that this Special Issue on the “Health Benefits of Meditation” is conceived. The aim is to collate a wide range of exemplars in contemporary research that will help to further the understanding of meditation as a therapeutic means, its underlying mechanisms, as well as the application of meditation in the context of individual and community health systems. The response to the call for papers for this Special Issue was overwhelming, and we are glad to include a total of 23 manuscripts covering a wide range of topics from seven countries/territories (United States of America [USA], United Kingdom [UK], Spain, Canada, Australia, New Zealand and Taiwan). This Special Issue provides a balance of different types of articles, including original research (9), review (10), communication (3), and case report (1). Out of these 23 articles, seven main themes were identified which are in the context of current meditation research. The following is a brief overview of the included manuscript grouped under these seven themes.

Mindfulness in Mental Health: Currently, mindfulness-based practice is the dominant paradigm in the clinical research of meditation. More than two-thirds of the included manuscripts are related to mindfulness meditation, either directly or indirectly. In particular, the application of mindfulness-based interventions (MBI) is an essential topic in mental health. Poirier et al. [10] investigated variations in psychic and somatic anxiety during and after the completion of Mindfulness-based Cognitive Therapy (MBCT) among 24 participants with bipolar disorder in an

uncontrolled trial. The 8-week intervention demonstrated a substantial effect on psychic anxiety but not on somatic anxiety. Other benefits observed included improved sleep quality and quality of life, as well as a slight reduction in manic symptoms. Hazlett-Stevens [11] observed a reduction in somatic symptoms in mental health patients following the practice of the Mindfulness-based Stress Reduction (MBSR) technique. Through secondary analysis of data from a sub-sample of 17 participants of an MBSR program conducted in a university-based community mental health clinic, the authors found improvements in patient-reported outcomes of physical fatigue, sleep disturbance, gastrointestinal symptoms, and various forms of pain. Improvements in somatic symptoms were most pronounced in participants with a probable diagnosis of generalised anxiety disorder.

Dang et al. [12] systematically reviewed the effectiveness of MBI on depressive symptoms and quality of life among patients with depression comorbid medical conditions and those with major depressive disorders. With the inclusion of 16 randomised controlled trials that utilised MBSR, MBCT, or their variations, this review found evidence supporting the treatment efficacy for depressive symptoms. To explain the dynamics of mindfulness in managing depression, Hede [13] proposed a binary model centred on the two modes of mindfulness (active and passive) with a tripartite human psyche (“sub-self”, “intra-self”, and “supra-self”) as the posited underpinning of selves. A combination of both cognitive decentring with active mindfulness to manage cognitive dysfunction and existential dis-identification with passive mindfulness to manage distorted self-identity was shown to help reduce the effects of depression. For readers unfamiliar with MBI, Hede also presented a comprehensive review of mindfulness meditation, MBSR, and MBCT.

Beyond established MBI, Ramos Díaz [14] proposed a new technique called the Compassionate Emotional Accompaniment Technique, as a brief mindfulness intervention to helping patients assimilate and regulate emotions in therapeutic sessions. The technique incorporates not only verbal affective support, but also physical contact and explores bodily sensations through the application of mindfulness facilitated by a therapist. The objective of this technique is to propagate a conscious reception of emotions, rather than being reactive towards them.

Meditation for Chronic Pain: Chronic pain is defined to be any painful condition that lasts more than three months. Patients with chronic pain often turn to meditation to alleviate pain and improve quality of life. Koulouris et al. [15] performed a systematic review to assess the suitability and effectiveness of yoga and mindfulness meditation practices in one group of chronic pain patients, namely those with rheumatoid arthritis. Results from thirteen clinical trials (Yoga=10, MBI=3) showed potential beneficial effects in pain symptoms, joint inflammation, fatigue, disease activity, and several psychological parameters. Nevertheless, research evidence based on statistics does not mean much to an individual who is suffering from pain. The ability to handle chronic pain with equanimity chiefly depends on individual practice. In a case report, Dobkin [16], a clinical psychologist specialising in MBSR, shared her personal experience of living with spondylolisthesis in relative peace by applying mindfulness guided by the Buddhist principles of the Four Noble Truths and the Noble Eight-fold Paths.

Meditation and Human Physiology: Three studies explored the effect of meditation on human physiology and its implication on health. Lo et al. [17] investigated the respiratory sinus arrhythmia (RSA) behaviours of Zen meditation practitioners (n=7) compared to healthy ordinary volunteers (n=25). Using two methods to estimate the RSA coefficient and the average RSA rate based on electrocardiogram data, the authors demonstrated that the practitioners of Zen

meditation had a significantly higher RSA coefficient and average RSA rate than the control. The results suggest that the practice of Zen meditation can potentially improve cardiorespiratory interaction and slow down the cardiopulmonary ageing. Guerriero and O'Hara [18] presented a narrative review of the impact of meditation on sleep and performance. Meditation appears to share several commonalities with the non-rapid eye movement sleep in physiology and may reduce the homeostatic pressures of sleep need and positively impact sleep architecture. However, the complicated relationship between meditation, sleep, and improved performance remains unclear and warrants further investigation. In another review, Thibodeaux and Rossano [19] examined the impact of meditation on immune function. Meditation appears to affect positively on natural killer cell activity and proportions, B-lymphocyte numbers, and telomerase activity while keeping CD8+ T-cell numbers in check during times of high stress. Hence, meditation can also be helpful for immuno-compromised patients, such as individuals infected with Human Immunodeficiency Virus.

Therapist Mindfulness and Professional Resilience: From patients to the healthcare system, there is an increasing call for incorporating mindfulness training for therapists and health service professionals. Razzaque [20] introduced Open Dialogue, which put clinician mindfulness at the heart of a network model, as the operationalisation of mindfulness into a mental health system to improve patient health outcomes. A multi-centre randomised controlled study is currently underway in the UK to test the model with the results due to be released in 2022. Separately, the trial of a new model of mindfulness training adapted from the standard MBSR/MBCT courses was conducted by Marx and Burroughes [21] in a UK mental health and learning disabilities organisation. The training aimed to preserve the quality and integrity of mindfulness training while being responsive and pragmatic to the needs and capacity of therapists and health service professionals. Mindfulness training is also being explored to alleviate burnout and compassion fatigue in human service professionals. In a separate study by Hanna and Pidgeon [22], 46 human service professionals were randomly allocated to undergo a mindful-awareness and resilience skills training program or serve as controls. The study found significant improvements in mindfulness, resilience, compassion satisfaction, and psychological well-being, as well as significant reductions in burnout and compassion fatigue at post-intervention in the intervention group, compared to the control group. This study provides evidence to support mindfulness-based approaches to enhance resilience in health service professionals.

Meditation for Children, Adolescents and College Students: Empirical meditation research with children and youth is less conducted compared to that in the adult population. Semple and Burke [23] presented their findings on the current state of research about the health benefits of MBI for this younger cohort. Promising evidence from 25 published studies and five systematic reviews/meta-analyses were found to support the effectiveness of mindfulness in improving the overall health and well-being of children and adolescents. Studies were also conducted in tertiary education settings to investigate how meditation affects young adults. Henning et al. [24] systematically reviewed the integration of mindfulness and physical exercises for medical students. The combination was found to enhance mental health, reduce stress levels, assist with interpersonal development and improve interpersonal responsiveness. Fisher and Pidgeon [25] proposed a novel four-facet model to study the development of resilience among university students. Increased mindfulness, positive emotion, and positive reappraisal were found to be the

factors predicting increased resilience when the students were confronted by perceived academic stress.

Besides effective stress management, high levels of mindfulness also helped to cultivate positive health behaviours, such as exercise participation as well as fruit and vegetable intake among university students with socio-economic disadvantages as reported by Bryan et al. [26]. Mindfulness meditation could be a viable strategy to combat health inequality according to the authors. Nevertheless, preconceptions towards mindfulness meditation may hinder its wider adoption. A survey by Lester et al. [27] among predominantly white, Christian, female undergraduate students (n=479) in a south-central university in the USA found mindfulness meditation was being regarded as a religious practice mainly for relaxation and to achieve focus, peace, and insights. Very few equated it to a health intervention. A novel approach to encourage the practice of mindfulness is through game-based meditation training. Barclay and Bowers [28] conducted a brief feasibility pilot study to investigate the use of an open-source meditation video game aimed at stimulating meditation practice among 42 undergraduate students. The results showed significant post-training decreases in state anxiety and a high level of usability. Hence, game-based meditation training may be a potential tool to encourage meditation practice.

Mindful Self-Compassion: Self-compassion is having an accepting, empathic, and kind attitude toward oneself during moments of sufferings. One can develop such capacity using mindfulness as a core element. It is a relatively new field of meditation research. Quist Møller et al. [29] conducted a systematic review of randomised controlled trials to identify the health benefits of self-compassion-based interventions. Although preliminary evidence did suggest that self-compassion training may enhance improvements in MBI for highly self-critical individuals, the authors cautioned against drawing any conclusion based on limited data. To advance knowledge on this novel technique, Jokic et al. [30] investigated the potential use of mindful self-compassion to enhance the wellbeing of adult learners in a qualitative study. Practising and building self-compassion was found to support adult learners when faced with challenges within their qualifications and in life.

Theoretical Framework for Meditation Research and Practice: Villamil et al. [31] explained three pillars of mind training: focused attention, open awareness, and kind intention. They summarised the practice framework of the “Wheel of Awareness” as an example which incorporated all three pillars to understand and practise awareness. Nonetheless, with so many different approaches, systems, and definitions for meditation, there is a lack of a consistent framework for describing meditation interventions in research. Allbritton and Heeter [32] put forth a framework with seven components: the individual, object, and experience within a meditation session, the immediate effects of the meditation session, the approach (which encompasses the tradition or system of knowledge) of the meditation, the intended outcomes of a meditation intervention in research, and the required engagement (such as how often, for how long, over what time period) of the intervention are the seven components. These components may be applied to any form of meditation.

To conclude, this Special Issue is a compilation of high-quality research in the field. Figure 1 shows a word cloud visualisation created from the keywords associated with all included manuscripts. The breadth and depth of the topics covered in this Special Issue truly reflect the landscape of the current status of meditation research. The editorial team hopes that this Special Issue will lay the foundation for the advancement of further research for many years to come.

7. Loizzo J. Meditation research, past, present, and future: Perspectives from the Nalanda contemplative science tradition. *Ann N Y Acad Sci.* 2014; 1307: 43-54. doi: 10.1111/nyas.12273.
8. Sharma H. Meditation: Process and effects. *Ayu.* 2015; 36: 233-237. doi: 10.4103/0974-8520.182756.
9. Crane RS. Implementing mindfulness in the mainstream: making the path by walking it. *Mindfulness (NY).* 2017; 8: 585-594. doi: 10.1007/s12671-016-0632-7.
10. Poirier N, Beaulieu S, Saury S, Goulet S. Impacts of mindfulness-based cognitive therapy (MBCT) on the psychological and functional wellbeing of patients with bipolar disorders. *OBM Integr Complement Med.* 2018; 3: 28. doi: 10.21926/obm.icm.1804028.
11. Hazlett-Stevens H. Specific somatic symptoms alleviated by mindfulness meditation training. *OBM Integr Complement Med.* 2018; 3: 23. doi: 10.21926/obm.icm.1804023.
12. Dang JM, Bashmi L, Meenaghan S, White J, Hedrick R, Djurovic J, et al. The efficacy of mindfulness-based interventions on depressive symptoms and quality of life: A systematic review of randomized controlled trials. *OBM Integr Complement Med.* 2018; 3: 11. doi: 10.21926/obm.icm.1802011.
13. Hede AJ. Binary model of the dynamics of active versus passive mindfulness in managing depression. *OBM Integr Complement Med.* 2018; 3: 37. doi: 10.21926/obm.icm.1804037.
14. Ramos Diaz NS. Proposal for a compassionate emotional accompaniment technique (CEAT) based on mindfulness to manage disturbing emotions. *OBM Integr Complement Med.* 2019; 4: 13. doi: 10.21926/obm.icm.1901017.
15. Koulouris A, Dorado K, McDonnell C, Edwards RR, Lazaridou A. A review of the efficacy of yoga and meditation-based interventions for rheumatoid arthritis. *OBM Integr Complement Med.* 2018; 3: 18. doi: 10.21926/10.21926/obm.icm.1803018.
16. Dobkin PL. Living with spondylolisthesis with (relative) equanimity. *OBM Integr Complement Med.* 2018; 3: 13. doi: 10.21926/obm.icm.1803013.
17. Lo PC, Lyu BT, Tian WJM. Comparison of respiratory sinus arrhythmia between Zen-meditation and control groups. *OBM Integr Complement Med.* 2019; 4: 17. doi: 10.21926/obm.icm.1902021.
18. Guerriero LE, O'Hara BF. Meditation, sleep, and performance. *OBM Integr Complement Med.* 2019; 4: 18. doi: 10.21926/obm.icm.1902031.
19. Thibodeaux N, Rossano MJ. Meditation and immune function: the impact of stress management on the immune system. *OBM Integr Complement Med.* 2018; 3: 32. doi: 10.21926/obm.icm.1804032.
20. Razaque R. Open dialogue and the impact of therapist mindfulness on the health of clients. *OBM Integr Complement Med.* 2018; 3: 1. doi: 10.21926/obm.icm.1801001.
21. Marx R, Burroughes L. An evaluation of a new programme training mindfulness teachers to deliver non-eight week adapted mindfulness-based interventions. *OBM Integr Complement Med.* 2019; 4: 19. doi: 10.21926/obm.icm.1901009.
22. Hanna A, Pidgeon AM. Leveraging mindfulness to build resilience and professional quality of life in human service professionals. *OBM Integr Complement Med.* 2018; 3: 7. doi: 10.21926/obm.icm.1802007.
23. Semple R, Burke C. State of the research: Physical and mental health benefits of mindfulness-based interventions for children and adolescents. *OBM Integr Complement Med.* 2019; 4: 31.

doi: 10.21926/obm.icm.1901001.

24. Henning MA, Park TJ, Moir F, Krägeloh C, Mysko C, Hobson J, Webster CS. Integrating mindfulness and physical exercises for medical students: A systematic review. *OBM Integr Complement Med*. 2018; 3: 27. doi: 10.21926/obm.icm.1804027.
25. Fisher FLE, Pidgeon AM. The four-facet model of eudaimonic resilience and its relationships with mindfulness, perceived stress and resilience. *OBM Integr Complement Med*. 2018; 3: 15. doi: 10.21926/obm.icm.1803015.
26. Bryan S, Hamilton M, Finn E. Mindfulness meditation in college students to advance health equity. *OBM Integr Complement Med*. 2018; 3: 6. doi: 10.21926/obm.icm.1802006.
27. Lester EG, Murrell AR, Dickson DE. A mixed methods approach to understanding conceptions of mindfulness meditation. *OBM Integr Complement Med*. 2018; 3: 26. doi: 10.21926/obm.icm.1804026.
28. Barclay PA, Bowers CA. Feasibility of a meditation video game to reduce anxiety in college students. *OBM Integr Complement Med*. 2018; 3: 24. doi: 10.21926/obm.icm.1804024.
29. Quist Møller SA, Sami S, Shapiro SL. Health benefits of (mindful) self-compassion meditation and the potential complementarity to mindfulness-based interventions: A review of randomized-controlled trials. *OBM Integr Complement Med*. 2019; 4: 20. doi: 10.21926/obm.icm.1901002.
30. Jokic S, Albrecht NJ, Smith SE. Mindful self-compassion and adult learner retention in post-compulsory education. *OBM Integr Complement Med*. 2019; 4: 28. doi: 10.21926/obm.icm.1901004.
31. Villamil A, Vogel T, Weisbaum E, Siegel DJ. Cultivating well-being through the three pillars of mind training: understanding how training the mind improves physiological and psychological well-being. *OBM Integr Complement Med*. 2019; 4: 16. doi: 10.21926/obm.icm.1901003.
32. Allbritton M, Heeter C. Meditation as an intervention for health: a framework for understanding meditation research. *OBM Integr Complement Med*. 2018; 3: 25. doi: 10.21926/obm.icm.1804025.



Enjoy *OBM Integrative and Complementary Medicine* by:

1. [Submitting a manuscript](#)
2. [Joining in volunteer reviewer bank](#)
3. [Joining Editorial Board](#)
4. [Guest editing a special issue](#)

For more details, please visit:

<http://www.lidsen.com/journals/icm>