

## Original Paper

# Effects of Mobile Mindfulness Meditation on the Mental Health of University Students: Systematic Review and Meta-analysis

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## Abstract

**Background:** Mobile mindfulness meditation (MMM) is a mindfulness meditation intervention implemented using mobile devices such as smartphones and apps. MMM has been used to help manage the mental health of university students.

**Objective:** This study aims to evaluate the effectiveness of MMM on the mental health of university students in the areas of stress, anxiety, depression, mindfulness, well-being, and resilience.

**Methods:** We conducted a systematic review and meta-analysis of the effectiveness of MMM on the mental health of university students. This study followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. An electronic literature search was performed on PubMed, Web of Science, EBSCO, Cochrane Library, and Embase databases, from inception to July 16, 2021. This study was conducted to identify studies that reported the effects of MMM on the primary outcomes including stress, anxiety, and depression, and on the secondary outcomes including mindfulness, well-being, and resilience. Two reviewers retrieved articles, evaluated quality, and extracted data independently. The methodological quality of the selected studies was determined using the Cochrane criteria for risk-of-bias assessment. Standardized mean differences (SMDs) for continuous outcomes and risk ratios for dichotomous outcomes were calculated. Sensitivity analyses and subgroup analyses were performed for results with high heterogeneity. The RevMan version 5.3 was used to perform meta-analysis.

**Results:** A total of 10 studies, including 958 university students, were selected for this meta-analysis. Results of the primary outcome showed that the MMM groups were more effective than the control groups in decreasing stress (SMD  $-0.41$ , 95% CI  $-0.59$  to  $-0.23$ ;  $P<.001$ ) and alleviating anxiety (SMD  $-0.29$ , 95% CI  $-0.50$  to  $-0.09$ ;  $P=.004$ ). However, there was no difference between the MMM groups and the control groups in depression (SMD  $-0.14$ , 95% CI  $-0.30$  to  $0.03$ ;  $P=.11$ ). The use of either waitlist control or traditional face-to-face intervention in the control group was identified as the source of heterogeneity. Specifically, the waitlist control subgroup (SMD  $-0.33$ , 95% CI  $-0.53$  to  $-0.13$ ;  $P=.002$ ) was superior when compared with the face-to-face subgroup (SMD  $0.29$ , 95% CI  $-0.01$  to  $0.59$ ;  $P=.06$ ). Results of the secondary outcome showed that the MMM groups were more effective than the control groups in enhancing well-being (SMD  $0.30$ , 95% CI  $0.11$ – $0.50$ ;  $P=.003$ ) and improving mindfulness (SMD  $2.66$ , 95% CI  $0.77$ – $4.55$ ;  $P=.006$ ). Whether commercial sponsorship was obtained was considered as the source of heterogeneity. The “without company support” group (SMD  $17.60$ , 95% CI  $11.32$ – $23.87$ ;  $P<.001$ ) was superior to the “with company support” group (SMD  $1.17$ , 95% CI  $-0.82$  to  $3.15$ ;  $P=.25$ ) in raising the level of mindfulness. However, there was no difference between the MMM and control groups in resilience (SMD  $-0.06$ , 95% CI  $-0.26$  to  $0.15$ ;  $P=.59$ ). The evidence level of the results from the 10 studies was determined to be moderate to low.

**Conclusions:** MMM was an effective method to reduce stress and anxiety, and to increase the well-being and mindfulness of university students. However, further studies are needed to confirm our findings.

**Trial Registration:** PROSPERO International Prospective Register of Systematic Reviews CRD42022303585; [https://www.crd.york.ac.uk/prospero/display\\_record.php?RecordID=303585](https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=303585)

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# **Review Mindfulness Meditation**

**Guodong Zhang, Yang Cao, Zi Yan**



## **Review Mindfulness Meditation:**

**Handbook of Mindfulness** , *The Impact of Mindfulness Meditation Programs on Performance-Related Outcomes* Kimberly A. Hepner,Erika Litvin Bloom,Sydne Newberry,Jessica L. Sousa,Karen Chan Osilla,Marika Booth,Armenda Bialas,Carolyn M. Rutter,2022-05-10 This report presents results from a systematic review and meta analyses of research examining how mindfulness meditation affects 13 performance related outcomes of interest to the U S Army and broader military The authors supplemented the systematic review by examining how mindfulness meditation could support stress management and exploring characteristics of selected mindfulness programs The Oxford Handbook of Meditation Miguel Farias,David Brazier,Mansur Lalljee,2021 A state of the art guide to meditation science and history its facts and myths Covers the development of meditation practices across the world exploring how the varieties of meditation techniques were created in different cultural and religious contexts Explores ethical social and religious implications and discusses controversial topics Book jacket Clinical Handbook of Mindfulness Fabrizio Didonna,2008-12-04 Over the last two decades Eastern psychology has provided fertile ground for therapists as a cornerstone a component or an adjunct of their work In particular research studies are identifying the Buddhist practice of mindfulness a non judgmental self observation that promotes personal awareness as a basis for effective interventions for a variety of disorders The Clinical Handbook of Mindfulness is a clearly written theory to practice guide to this powerful therapeutic approach and related concepts in meditation acceptance and compassion and its potential for treating a range of frequently encountered psychological problems Key features of the Handbook A neurobiological review of how mindfulness works Strategies for engaging patients in practicing mindfulness Tools and techniques for assessing mindfulness Interventions for high profile conditions including depression anxiety trauma Special chapters on using mindfulness in oncology and chronic pain Interventions specific to children and elders Unique applications to inpatient settings Issues in professional training Appendix of exercises The Clinical Handbook of Mindfulness includes the contributions of some of the most important authors and researchers in the field of mindfulness based interventions It will have wide appeal among clinicians researchers and scholars in mental health and its potential for application makes it an excellent reference for students and trainees *Steps towards a Mindful Organisation* Fabrice Mielke,2021-03-23 This book presents a guideline for turning any organisation into a more mindful one allowing it to manage unexpected events and develop stronger resilience The author conducted empirical research with a German IT company s staff and its leadership in a longitudinal way The whole team was trained in individual mindfulness competencies Individual mindfulness is a state of being that can be developed through mindfulness mediation When combined with social interactions cultural adaptations and structural changes collective mindfulness develops Collective mindfulness allows an organisation to become more agile The author argues that mindfulness training influences the openness and knowledge sharing behaviour of an organisation first on an individual and then a collective level Such training

can generate awareness increase empathy between the team members and lead towards a more successful organisation This study can inspire team managers to improve the work environment as well as academics to update their current level of research in the field of individual and collective mindfulness

**Handbook of Assessment in Mindfulness Research** Oleg N. Medvedev,Christian U. Krägeloh,Richard J. Siegert,Nirbhay N. Singh,2025-08-03 This handbook provides comprehensive coverage of assessment instruments used in mindfulness research It discusses traditional and modern approaches used to develop psychometric measures and to establish their reliability and validity such as classical test theory item response theory and Rasch model generalizability theory facet benchmarking and network analysis The handbook provides information on conceptual foundations development and psychometric properties of assessment instruments used to measure mindfulness in children adolescents and adults In addition it provides similar information on scales used in specific contexts and for various purposes It reviews behavioral cognitive and psychophysiological assessment measures of mindfulness The handbook examines a broad range of psychological physical health and mental health and related measures that are used in mindfulness research This reference work enables researchers to choose appropriate measurement tools for a broad range of mindfulness research Key areas of coverage include Nature and theoretical foundations of assessment Origins and definitions of mindfulness Mindfulness scales for children and adolescents Mindfulness scales for adults Mindfulness scales for specific contexts and purposes Mindfulness and Buddhist related scales Behavioral assessments of mindfulness Cognitive and psychophysiological assessments of mindfulness The Handbook of Assessment in Mindfulness Research is an essential reference for researchers professors and graduate students as well as clinicians therapists and other mental health practitioners in clinical psychology and affiliated medical and mental health disciplines including complementary and alternative medicine social work occupational and rehabilitation therapy

**Wherever You Go, There You Are** Jon Kabat-Zinn,2023-12-05 Find quiet reflective moments in your life and reduce your stress levels drastically with this classic bestselling guide updated and featuring a new introduction and afterword When Wherever You Go There You Are was first published in 1994 no one could have predicted that the book would launch itself onto bestseller lists nationwide and sell over 1 million copies to date Thirty years later Wherever You Go There You Are remains a foundational guide to mindfulness and meditation introducing readers to the practice and guiding them through the process The author of over half a dozen books on mindfulness Jon Kabat Zinn combines his research and medical background with his spiritual knowledge to help readers find peace and change their lives In this new edition readers will find a new introduction and afterword from Kabat Zinn as well as factual updates throughout to address changes in research and knowledge since it was originally published After the special tumult of the last few years as well as the promise of more unrest in the future Wherever You Go There You Are serves as an anchor for a whole new generation of readers looking to find their center and achieve their true self

**Mindfulness, Mind-body Exercises, and Health Promotion** Guodong Zhang, Yang Cao, Zi Yan,2025-02-14 High

intensity sports and physical exercise have been linked to various health benefits. However, when it comes to increasing longevity, these activities may not be an ideal option for the general population. Mind-body exercise, which combines physical exercise with mindfulness, may be more effective in promoting and restoring health, especially for those with chronic symptoms or poor health conditions. Many mind-body exercises, such as Tai Chi, Qigong, Chan Chuang, and Yoga, have their roots in Eastern cultures. They have gained popularity around the world and became a new fashion in the post-COVID-19 era. These exercises typically help practitioners shift their focus from the outside world, past or future, to the present moment through gentle body movements. Mind-body exercises emphasize the body's innate ability to heal itself. By disconnecting from the noisy outside world, the body is given the opportunity to heal. This aligns with the classic belief in Chinese medicine that the body itself is the best medicine.

Handbook of Mindfulness and Self-Regulation: Theoretical, Cognitive Neuroscience, Social-Personality, and Clinical Perspectives Brian D. Ostafin, Michael D. Robinson, Brian P. Meier, 2025-09-26. The second edition of the handbook provides an updated and expanded overview of theoretical models, empirical studies, and critical perspectives concerning the interface between mindfulness and self-regulation. The 20 chapters cover advances in the field since the first edition was published, and 85% of the chapters cover new material. Chapters are grouped by Theoretical Perspectives, Cognitive Neuroscience Perspectives, Social Personality Perspectives, and Clinical Perspectives, representing most major areas of psychology and cognitive science. Given the expanded scope, the new edition is titled **Handbook of Mindfulness and Self-Regulation: Theoretical, Cognitive Neuroscience, Social Personality, and Clinical Perspectives**.

**The Psychology of Meditation** Peter Sedlmeier, 2022-05-10. All you need to know about the psychology of meditation. Written by an expert in the field, it provides unique theories of meditation approaches, explores traditional and Western approaches, recommends how to improve future research, and explores new topics, e.g., negative effects. More about the book: What is meditation? What do people hope to get from practicing it, and what do they really get? How can the effects of meditation be explained? And what are the best approaches to researching the psychology of meditation so we can understand more? This unique book by a leading expert provides state-of-the-art answers to these questions. Contrary to commonly accepted wisdom, meditation comes in a range of varieties, and the reasons why people begin to meditate and stay with it are also numerous and varied. Even mindfulness, which is often wrongly used as a synonym for meditation, comes in many forms. The book succinctly summarizes the beneficial effects found in the avalanche of studies available, especially in clinical contexts, and also explores recently emerging topics such as negative effects and the impact of ethics and spirituality. The author expertly provides theories of the four traditional meditation approaches, which has never been done before in this form, and gives a critical overview of Western approaches to explain the effects of meditation. In conclusion, he makes recommendations on how to improve future meditation research. This book is of interest to mental health practitioners, researchers, and students interested in meditation and mindfulness approaches.

Review Mindfulness Meditation: Bestsellers in 2023 The year 2023 has witnessed a remarkable surge in literary brilliance, with numerous captivating novels enthralling the hearts of readers worldwide. Lets delve into the realm of popular books, exploring the captivating narratives that have captivated audiences this year. The Must-Read : Colleen Hoover "It Ends with Us" This poignant tale of love, loss, and resilience has gripped readers with its raw and emotional exploration of domestic abuse. Hoover skillfully weaves a story of hope and healing, reminding us that even in the darkest of times, the human spirit can triumph. Review Mindfulness Meditation : Taylor Jenkins Reids "The Seven Husbands of Evelyn Hugo" This captivating historical fiction novel unravels the life of Evelyn Hugo, a Hollywood icon who defies expectations and societal norms to pursue her dreams. Reids compelling storytelling and compelling characters transport readers to a bygone era, immersing them in a world of glamour, ambition, and self-discovery. Discover the Magic : Delia Owens "Where the Crawdads Sing" This evocative coming-of-age story follows Kya Clark, a young woman who grows up alone in the marshes of North Carolina. Owens weaves a tale of resilience, survival, and the transformative power of nature, captivating readers with its evocative prose and mesmerizing setting. These popular novels represent just a fraction of the literary treasures that have emerged in 2023. Whether you seek tales of romance, adventure, or personal growth, the world of literature offers an abundance of compelling stories waiting to be discovered. The novel begins with Richard Papen, a bright but troubled young man, arriving at Hampden College. Richard is immediately drawn to the group of students who call themselves the Classics Club. The club is led by Henry Winter, a brilliant and charismatic young man. Henry is obsessed with Greek mythology and philosophy, and he quickly draws Richard into his world. The other members of the Classics Club are equally as fascinating. Bunny Corcoran is a wealthy and spoiled young man who is always looking for a good time. Charles Tavis is a quiet and reserved young man who is deeply in love with Henry. Camilla Macaulay is a beautiful and intelligent young woman who is drawn to the power and danger of the Classics Club. The students are all deeply in love with Morrow, and they are willing to do anything to please him. Morrow is a complex and mysterious figure, and he seems to be manipulating the students for his own purposes. As the students become more involved with Morrow, they begin to commit increasingly dangerous acts. The Secret History is a brilliant and thrilling novel that will keep you guessing until the very end. The novel is a cautionary tale about the dangers of obsession and the power of evil.

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