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OPINION REVIEW

# Contemplative sciences: A future beyond mindfulness

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#### Abstract

Mindfulness is a psychological technique based on Eastern meditative practices that was developed in the late 1970s by Kabat-Zinn at the University of Massachusetts. Initially, there was a debate over whether it should be considered a scientific technique or labelled as part of the "new wave" practices. Today, mindfulness is omnipresent in modern societies but has suffered from merchandising and banalization, which has been strongly criticized. Despite some limitations regarding methodological aspects of mindfulness research, it is considered effective for treating many physical and psychological disorders, and even it is recommended in clinical guidelines such the British National Institute for Health and Care Excellence. During the last 2500 years, mindfulness practices have moved from Northern India across most of Asia, but their mixing with Western science and culture at the end of the 20th century is considered a key event in recent history. For the first time in human history, due to globalization, the wisdom of all contemplative traditions can be shared with all human beings and assessed by science. Mindfulness practices, yoga included, are giving birth to a new field of knowledge, contemplative sciences, which go beyond mindfulness and is devoted to helping humanity to reach higher levels of happiness and mental peace.

Key Words: Contemplative sciences; Mindfulness; Meditation; Compassion; Psychotherapy; Wellness

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**Core Tip:** This paper reflects on the following subjects: (1) The efficacy and expansion of mindfulness in modern world-limitations from a scientific and a philosophical

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perspective; (2) The exciting times we are entering as a consequence of the marriage between science and contemplative techniques; and (3) Finally, the consequence of all these aspects-the birth of a new field of knowledge, the contemplative sciences, which includes mindfulness. They will offer humankind the wisdom of centuries of deep knowledge to facilitate the highest levels of happiness and connection imaginable.

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# INTRODUCTION

# Concept and origin of mindfulness

Mindfulness practice involves developing the skill of directing one's attention to whatever is happening in the present moment[1]. According to Kabat-Zinn[2], "mindfulness is the practice of purposely bringing one's attention to experiences occurring in the present moment without judgment", a skill that can be developed through attentional meditation or other training. As noted by Brown et al<sup>[3]</sup>, definitions of mindfulness are typically selectively interpreted based on who is studying them and how they are applied. Some have viewed mindfulness as a mental state, while others have considered it as a set of skills and techniques.

The Buddhist term translated into English as "mindfulness" originates in the Pali term sati and in its Sanskrit counterpart smrti, and it is a significant element of Buddhist traditions<sup>[4]</sup>. It is often translated as "bare attention", but in Buddhist texts, it has a broader meaning and application and can also be defined as "memory" or "recollection"[5]. Sati is one of the seven factors of Enlightenment, and "correct" or "right" mindfulness is the seventh element of the Noble Eightfold Path, the main

Jon Kabat-Zinn started to teach mindfulness in September 1979 at a hospital associated with the University of Massachusetts. This was the beginning of mindfulness in the West. The program was called the "Stress Reduction and Relaxation Program". He tried to bring his Buddhist practice together with his work life as one unified whole in the service of something useful<sup>[2]</sup>. Some months before, in a two-week vipassana retreat, he had experienced a "vision" about mindfulness that impressed him. In his own words, in the vision, he saw not only a model that could be put in place but also the long-term implications of the implementation of mindfulness across the world[1]. During the 1980s, Kabat-Zinn's main worry was to avoid mindfulness being labelled a "hippy" or "new age" practice, and for that reason, he eliminated any Buddhist terminology and focused on its medical benefits and the importance of being assessed by scientific research<sup>[2]</sup>. Today, mindfulness has become part of modern society's mainstream way of life<sup>[6]</sup>, and it is considered the next revolution in public health<sup>[7]</sup>.

# **EFFICACY OF MINDFULNESS**

In the last 20 years, meta-analyses have demonstrated the utility of mindfulness for increasing psychological and physical wellbeing in healthy adults in general<sup>[8]</sup> and in specific environments such as the workplace[9] or school[10]. As a treatment, it has demonstrated efficacy in the treatment of mental disorders[11], some relevant studies are summarized in Table 1.

Mindfulness seems useful across all age ranges from, for example, adolescents<sup>[12]</sup> to middle-aged military veterans[13].

Regarding medical conditions, meta-analyses confirm the efficacy of mindfulness in treating cancer in general<sup>[14]</sup> and more specifically in treating breast cancer<sup>[15]</sup>, pain<sup>[16]</sup>, hypertension<sup>[17]</sup>, diabetes<sup>[18]</sup>, rheumatoid arthritis<sup>[19]</sup> and many other disorders.

Overall, the maximum efficacy of mindfulness as a treatment has been found in treating recurrent depression<sup>[20]</sup>, and this is the reason the British Clinical Guide

Table 1 Efficacy demonstrated of mindfulness as treatment in different mental disorders	
Mental disorder	Ref.
Depression and anxiety	Hofmann et al <sup>[39]</sup>
	Blanck et al <sup>[40]</sup>
	Godfrin et al <sup>[41]</sup>
Subtance and behavioural addictions	Sancho et al <sup>[42]</sup>
	Glasner et al <sup>[43</sup> ]
Schizophrenia	Hodann-Caudevilla et al <sup>[44]</sup>
	Chien et al <sup>[45]</sup>

National Institute for Health and Care Excellence<sup>[21]</sup> recommends mindfulness, considering it the psychological treatment of choice.

However, some authors<sup>[22]</sup> have argued that published data about the efficacy of mindfulness may be oversized and that the authors of mindfulness studies may be biased and more focused on positive outcomes than on negative outcomes. In this sense, the harshest criticism of the scientific evidence regarding the benefits of mindfulness was the paper of Van Dam *et al*<sup>[23]</sup>, which described the relevant methodological limitations in the research on this technique. This article was responded to by prominent researchers in the field<sup>[24]</sup>, who affirmed that those limitations are commonplace for all psychological therapies and, even more important in our opinion, that mindfulness, as part of a contemplative tradition, was not developed specifically for treating human disorders but was created to improve human wellbeing and flourishing, and this is the point I would like to emphasize in this article.

# LONG JOURNEY OF MINDFULNESS IN THE WEST

Mindfulness, as the core teaching of Buddhism, has travelled a long journey from its original homeland in Northeast India. Early on, it travelled to the island of Sri Lanka; centuries later, it spread to the river basins of southeast Asia, then to monasteries in the mountains of China, Korea and Japan, and on to the hidden kingdoms of the Himalayas. Across the centuries and these countries, mindfulness had to adapt to the characteristics of the people who lived there and incorporated their wisdom. However, the last stage in this journey, the growth into Western countries, has produced unparalleled consequences. According to the prestigious British historian Toynbee<sup>[25]</sup>, the arrival of Buddhism in the West was the single most important fact during the 20<sup>th</sup> century, as it allowed meditation to become part of mainstream Western culture.

As a consequence, mindfulness has had to be assessed by science and demonstrated to be efficacious in different environments. At present, mindfulness has moved from its traditional settings of peaceful Buddhist monasteries and is now practiced in developed and secularized cities inhabited by people eager for pragmatic results. People who transmit these teachings are no longer venerable old meditation masters followed by groups of disciples but are instead university lecturers holding degrees in psychology or medicine. Mindfulness is used not to obtain freedom from the cycle of birth and death but to liberate people from the strains of stressful relationships, mental diseases and the worries of daily life.

This new model of understanding mindfulness has been severely criticized as the so-called "McMindfulness" movement [26]. Critics have called out the indiscriminate use of mindfulness decontextualized from the original Buddhist teachings from in which it originated and its employment in different settings. Mindfulness meditation has become so popular that many products and merchandising practices use this name. For example, the trendy fitness apparel company Lululemon is now advertising mindfulness clothing for men. There are also products called Mindful Meats and Mindful Mints, and Sherwin-Williams sells a paint colour they call Mindful Gray<sup>[27]</sup>. Mindfulness is said to be a \$4B industry. More than 60000 books for sale on Amazon have a variant of "mindfulness" in their title and tout the benefits of mindful parenting, mindful eating, mindful teaching, mindful therapy, mindful leadership, mindful finance, mindful nations, and mindful dog owners, to name just a few [28].

This oversimplification also occurs in scientific research: There is a danger that the wisdom of Eastern contemplative traditions might be reduced to a matter of gaining certain skills such as attention, memory or emotion regulation. Alternatively, based on materialistic premises, the efficacy of mindful practices could be reductively explained exclusively on the basis of neurophysiology<sup>[5]</sup>.

# UNBELIEVABLE HISTORICAL PERIOD IN WHICH WE LIVE

The beginning of the 21st century is probably one of the most fascinating periods in human history. Many masters of contemplative traditions are teaching mindfulness as a way to reach a wider range of people. Most long-term mindfulness instructors embrace spiritual teachings, as mindfulness is not able to provide answers to the deepest questions of existence.

Today, online technologies and cheap travel around the world have facilitated a level of globalization that makes it possible to receive teachings from great masters from different countries. This was impossible centuries ago, and a disciple had to choose one only master and remain with that master for years. Now, the immediate interchanging of ideas and the dissemination of teachings considered secret for generations are accelerating human knowledge acquisition. In addition, the marriage of science and contemplative wisdom allows us to examine the impact of traditional meditative techniques and the changes they produce in the human brain and body.

#### CONTEMPLATIVE SCIENCES

In his 1930 book "Civilization and Its Discontents", Freud advocated for the need for a new and secular science of psychotherapy as a pragmatic alternative to the traditional healing techniques offered by religions. Since then, Western psychology/psychiatry has operated separately from religion[29]. However, in recent years, robust research has confirmed the therapeutic and wellbeing potential of qualities such as love, compassion and altruism[30-33]. For this reason, conventional psychology is moving towards contemplative science, which has always been considered non-scientific knowledge. Recent studies have confirmed, for instance, that Tibetan monks can voluntarily self-generate high-frequency gamma synchrony[34] and that mindfulness meditation increases thickness in the prefrontal and insular cortex[35]. Yoga, a group of physical, mental, and spiritual practices originated in ancient India, has also demonstrated a great efficacy in improving mental well-being[36], and is considered a relevant component of the contemplative sciences. These and other research studies have placed meditation at the axis of contemplative science and have emphasized brain neuroplasticity.

These developments in the field of psychology gave birth to the so-called contemplative sciences movement some years ago. Many experts believe that mindfulness has demonstrated to be effective and that a wider theoretical frame is necessary. Davidson et al[37] coined the term "contemplative neuroscience", which describes the emerging field arising at the intersection of meditation research and neuroscience. It includes any kind of meditation, yoga, mantra recitation, intensive breathing or healing movement[38]. This new science fulfils the dream of visionary pioneers in psychiatry and psychology, such as Carl Gustav Jung and Ken Wilber, and is connected to some aspects of transpersonal psychology. Several universities across the world have developed courses on or departments for on contemplative sciences or similar disciplines, some examples including Brown University (Providence, Rhode Island), the University of San Diego (San Diego, California), Naropa University (Boulder, Colorado) or the University of Mary Washington (Fredericksburg, Virginia) in the United States and Ottawa in Canada.

#### CONCLUSION

# Future of mindfulness

I envision the future of mindfulness and related disciplines like a millennial wisdom tree with two main branches. In the first, mindfulness will develop with an instrumental aim. Its objective will be to relieve the mental and physical suffering of ill people and to increase the wellbeing of healthy persons in everyday life and in every

challenging environment they live in. However, in addition to mindfulness, there will be a second branch, contemplative sciences. This branch will be devoted to allowing humanity to experience the highest level of everlasting happiness that humankind can enjoy, regardless of external circumstances, which is linked to understanding the ultimate reality.

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# REFERENCES

- Kabat-Zinn J. Some reflections on the origins of MBSR, skillful means, and the trouble with maps. Dangdai Fojiao 2011; 12: 281-306 [DOI: 10.1080/14639947.2011.564844]
- Kabat-Zinn J. Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness. New York: Bantam Dell, 1990
- Brown KW, Ryan RM, Creswell JD. Mindfulness: Theoretical foundations and evidence for its salutary effects. Psychol Inq 2007; 18: 211-37 [DOI: 10.1080/10478400701598298]
- Van Gordon W, Shonin E, Griffiths MD, Singh NN. There is only one mindfulness: Why science and buddhism need to work together. *Mindfulness* 2014; **6**: 49-56 [DOI: 10.1007/s12671-014-0379-y]
- Boddhi B. What does mindfulness really mean? A canonical perspective. In: Williams MG, Kabat-Zinn J. Mindfulness. Diverse perspectives on its meaning, origins and applications. London: Routledge, 2013: 19-39 [DOI: 10.1080/14639947.2011.564813]
- Wilson J. Mindful America. The mutual transformation of Buddhist Meditation and American Culture. Oxford: Oxford University Press, 2015 [DOI: 10.1080/0048721X.2015.1089738]
- **Baer RA.** Mindfulness training as a clinical intervention; a conceptual and empirical review. Clin Psychol Sci and Practice 2003; 10: 125-43 [DOI: 10.1093/clipsy.bpg015]
- Khoury B, Sharma M, Rush SE, Fournier C. Mindfulness-based stress reduction for healthy individuals: A meta-analysis. J Psychosom Res 2015; 78: 519-528 [PMID: 25818837 DOI: 10.1016/j.jpsychores.2015.03.009]
- Vonderlin R. Biermann M. Bohus M. Lyssenko L. Mindfulness-based programs in the workplace: a meta-analysis of randomized controlled trials. Mindfulness 2020; 11: 1579-1598 [DOI: 10.1007/s12671-020-01328-3]
- Dawson AF, Brown WW, Anderson J, Datta B, Donald JN, Hong K, Allan S, Mole TB, Jones PB, Galante J. Mindfulness-Based Interventions for University Students: A Systematic Review and Meta-Analysis of Randomised Controlled Trials. Appl Psychol Health Well Being 2020; 12: 384-410 [PMID: 31743957 DOI: 10.1111/aphw.12188]
- Goldberg SB, Tucker RP, Greene PA, Davidson RJ, Wampold BE, Kearney DJ, Simpson TL. Mindfulness-based interventions for psychiatric disorders: A systematic review and meta-analysis. Clin Psychol Rev 2018; **59**: 52-60 [PMID: 29126747 DOI: 10.1016/j.cpr.2017.10.011]
- 12 Reangsing C, Punsuwun S, Schneider JK. Effects of mindfulness interventions on depressive symptoms in adolescents: A meta-analysis. Int J Nurs Stud 2021; 115: 103848 [PMID: 33383273 DOI: 10.1016/j.ijnurstu.2020.103848]
- Goldberg SB, Riordan KM, Sun S, Kearney DJ, Simpson TL. Efficacy and acceptability of mindfulness-based interventions for military veterans: A systematic review and meta-analysis. JPsychosom Res 2020; 138: 110232 [PMID: 32906008 DOI: 10.1016/j.jpsychores.2020.110232]
- Zhang MF, Wen YS, Liu WY, Peng LF, Wu XD, Liu QW. Effectiveness of Mindfulness-based Therapy for Reducing Anxiety and Depression in Patients With Cancer: A Meta-analysis. Medicine (Baltimore) 2015; 94: e0897-e0890 [PMID: 26559246 DOI: 10.1097/MD.000000000000897]
- Huang HP, He M, Wang HY, Zhou M. A meta-analysis of the benefits of mindfulness-based stress reduction (MBSR) on psychological function among breast cancer (BC) survivors. Breast Cancer 2016; **23**: 568-576 [PMID: 25820148 DOI: 10.1007/s12282-015-0604-0]
- 16 Pei JH, Ma T, Nan RL, Chen HX, Zhang YB, Gou L, Dou XM. Mindfulness-Based Cognitive Therapy for Treating Chronic Pain A Systematic Review and Meta-analysis. Psychol Health Med 2021; 26: 333-346 [PMID: 33241941 DOI: 10.1080/13548506.2020.1849746]
- Lee EKP, Yeung NCY, Xu Z, Zhang D, Yu CP, Wong SYS. Effect and Acceptability of Mindfulness-Based Stress Reduction Program on Patients With Elevated Blood Pressure or Hypertension: A Meta-Analysis of Randomized Controlled Trials. Hypertension 2020; 76: 1992-2001 [PMID: 33131316 DOI: 10.1161/HYPERTENSIONAHA.120.16160]
- Ni YX, Ma L, Li JP. Effects of mindfulness-based intervention on glycemic control and psychological outcomes in people with diabetes: A systematic review and meta-analysis. J Diabetes Investig 2020 [PMID: 33064926 DOI: 10.1111/jdi.13439]
- Zhou B, Wang G, Hong Y, Xu S, Wang J, Yu H, Liu Y, Yu L. Mindfulness interventions for rheumatoid arthritis: A systematic review and meta-analysis. Complement Ther Clin Pract 2020; 39:

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- 101088 [PMID: 31957665 DOI: 10.1016/j.ctcp.2020.101088]
- Kuyken W, Warren FC, Taylor RS, Whalley B, Crane C, Bondolfi G, Hayes R, Huijbers M, Ma H, Schweizer S, Segal Z, Speckens A, Teasdale JD, Van Heeringen K, Williams M, Byford S, Byng R, Dalgleish T. Efficacy of Mindfulness-Based Cognitive Therapy in Prevention of Depressive Relapse: An Individual Patient Data Meta-analysis From Randomized Trials. JAMA Psychiatry 2016; 73: 565-574 [PMID: 27119968 DOI: 10.1001/jamapsychiatry.2016.0076]
- Mukuria C, Brazier J, Barkham M, Connell J, Hardy G, Hutten R, Saxon D, Dent-Brown K, Parry G. Cost-effectiveness of an improving access to psychological therapies service. Br J Psychiatry 2013; **202**: 220-227 [PMID: 23307921 DOI: 10.1192/bjp.bp.111.107888]
- Coronado-Montoya S, Levis AW, Kwakkenbos L, Steele RJ, Turner EH, Thombs BD. Reporting of Positive Results in Randomized Controlled Trials of Mindfulness-Based Mental Health Interventions. PLoS One 2016; 11: e0153220 [PMID: 27058355 DOI: 10.1371/journal.pone.0153220]
- Van Dam NT, van Vugt MK, Vago DR, Schmalzl L, Saron CD, Olendzki A, Meissner T, Lazar SW, Kerr CE, Gorchov J, Fox KCR, Field BA, Britton WB, Brefczynski-Lewis JA, Meyer DE. Mind the Hype: A Critical Evaluation and Prescriptive Agenda for Research on Mindfulness and Meditation. Perspect Psychol Sci 2018; 13: 36-61 [PMID: 29016274 DOI: 10.1177/1745691617709589]
- 24 Davidson RJ, Dahl CJ. Outstanding Challenges in Scientific Research on Mindfulness and Meditation. Perspect Psychol Sci 2018; 13: 62-65 [PMID: 29016238 DOI: 10.1177/1745691617718358]
- Toynbee AJ. A study of history. Oxford: Oxford University Press, 1988
- Purser R, Loy D. Beyond mindfulness. Huffington Post. 1 July 2013. [cited February 15, 2021]. Available from: https://www.huffpost.com/entry/beyond-mcmindfulness\_b\_3519289?guccounter=1
- Harvard Divinity School. Mainstream meditation and the million-dollar mindfulness boom. Harvard Divinity School. 13 August 2019. [cited February 6, 2021]. Available from: https://hds.harvard.edu/news/2019/08/13/mainstream-meditation-and-million-dollar-mindfulness-
- 28 **Purser R.** The mindfulness conspiracy. The Guardian. 10 January 2021. [cited February 16, 2021] Available from: https://www.theguardian.com/Lifeandstyle/2019/jun/14/the-mindfulness-conspiracycapitalist-spirituality
- Neeleman J, Persaud R. Why do psychiatrists neglect religion? Br J Med Psychol 1995; 68 (Pt 2): 169-178 [PMID: 7547613 DOI: 10.1111/j.2044-8341.1995.tb01823.x]
- 30 Lutz A, Brefczynski-Lewis J, Johnstone T, Davidson RJ. Regulation of the neural circuitry of emotion by compassion meditation: effects of meditative expertise. PLoS One 2008; 3: e1897 [PMID: 18365029 DOI: 10.1371/journal.pone.0001897]
- **Brown D.** Mastery of the mind East and West: excellence in being and doing and everyday happiness. 31 Ann N Y Acad Sci 2009; 1172: 231-251 [PMID: 19743557 DOI: 10.1196/annals.1393.018]
- Singer T, Klimecki OM. Empathy and compassion. Curr Biol 2014; 24: R875-R878 [PMID: 25247366 DOI: 10.1016/j.cub.2014.06.054]
- 33 Amihai I, Kozhevnikov M. Arousal vs. relaxation: a comparison of the neurophysiological and cognitive correlates of Vajrayana and Theravada meditative practices. PLoS One 2014; 9: e102990 [PMID: 25051268 DOI: 10.1371/journal.pone.0102990]
- Lutz A, Greischar LL, Rawlings NB, Ricard M, Davidson RJ. Long-term meditators self-induce highamplitude gamma synchrony during mental practice. Proc Natl Acad Sci USA 2004; 101: 16369-16373 [PMID: 15534199 DOI: 10.1073/pnas.0407401101]
- Lazar SW, Kerr CE, Wasserman RH, Gray JR, Greve DN, Treadway MT, McGarvey M, Quinn BT, Dusek JA, Benson H, Rauch SL, Moore CI, Fischl B. Meditation experience is associated with increased cortical thickness. Neuroreport 2005; 16: 1893-1897 [PMID: 16272874 DOI: 10.1097/01.wnr.0000186598.66243.19
- Kelley GA, Kelley KS. Yoga, Health-Related Quality of Life and Mental Well-Being: A Re-analysis of a Meta-analysis Using the Quality Effects Model. J Gerontol A Biol Sci Med Sci 2020; 75: 1732-1736 [PMID: 31814012 DOI: 10.1093/gerona/glz284]
- 37 Davidson R, Begley S. The emotional life of your brain. New York: Plume Books, 2013 [DOI: 10.1080/00029157.2013.827918]
- Loizzo J. Optimizing learning and quality of life throughout the lifespan: a global framework for research and application. Ann N Y Acad Sci 2009; 1172: 186-198 [PMID: 19743554 DOI: 10.1196/annals.1393.006]
- Hofmann SG, Sawyer AT, Witt AA, Oh D. The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. J Consult Clin Psychol 2010; 78: 169-183 [PMID: 20350028 DOI: 10.1037/a00185551
- Blanck P, Perleth S, Heidenreich T, Kröger P, Ditzen B, Bents H, Mander J. Effects of mindfulness exercises as stand-alone intervention on symptoms of anxiety and depression: Systematic review and meta-analysis. Behav Res Ther 2018; 102: 25-35 [PMID: 29291584 DOI: 10.1016/j.brat.2017.12.002]
- Godfrin KA, van Heeringen C. The effects of mindfulness-based cognitive therapy on recurrence of depressive episodes, mental health and quality of life: A randomized controlled study. Behav Res Ther 2010; 48: 738-746 [PMID: 20462570 DOI: 10.1016/j.brat.2010.04.006]
- Sancho M, De Gracia M, Rodríguez RC, Mallorquí-Bagué N, Sánchez-González J, Trujols J, Sánchez I, Jiménez-Murcia S, Menchón JM. Mindfulness-Based Interventions for the Treatment of Substance and Behavioral Addictions: A Systematic Review. Front Psychiatry 2018; 9: 95 [PMID: 29651257 DOI: 10.3389/fpsyt.2018.00095]



- Glasner-Edwards S, Mooney LJ, Ang A, Garneau HC, Hartwell E, Brecht ML, Rawson RA. Mindfulness Based Relapse Prevention for Stimulant Dependent Adults: A Pilot Randomized Clinical Trial. Mindfulness (N Y) 2017; 8: 126-135 [PMID: 28191264 DOI: 10.1007/s12671-016-0586-9]
- Hodann-Caudevilla RM, Díaz-Silveira C, Burgos-Julián FA, Santed MA. Mindfulness-Based Interventions for People with Schizophrenia: A Systematic Review and Meta-Analysis. Int J Environ Res Public Health 2020; 17 [PMID: 32629764 DOI: 10.3390/ijerph17134690]
- Chien WT, Thompson DR. Effects of a mindfulness-based psychoeducation programme for Chinese patients with schizophrenia: 2-year follow-up. Br J Psychiatry 2014; 205: 52-59 [PMID: 24809397 DOI: 10.1192/bjp.bp.113.134635]



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