

ISSN: 2514-0612

Journal homepage: <http://briefencounters-journal.co.uk/BE>

The Rise of Medicalised Mindfulness During the 1970s and 1980s: The Attempted Convergence of Religion and Science

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Source: *Brief Encounters*, Vol. 6 No. 1 (April 2022), pp. 81–92.

URL: <http://briefencounters-journal.co.uk/BE/article/view/296>

DOI: <https://doi.org/10.24134/be.v6i1.296>

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The Rise of Medicalised Mindfulness During the 1970s and 1980s: The Attempted Convergence of Religion and Science

Stephen Morris

Introduction

With the aim of bridging these two epistemologies of science and dharma, I felt impelled to point out in the early years of MBSR the obvious etymological linkage of the words medicine and meditation and articulate for medical audiences their root meanings.¹

This Kabat-Zinn quotation comes from his retrospective explanation of the development of MBSR. It summarises the relocation of mindfulness to science and makes sweeping generalisations about Eastern spiritual traditions. There is no data currently available that explains the impact of this ‘bridging’ on processes of science creation. The original rationale for the clinical use of mindfulness described the technique as a pan-spiritual concept, present in Buddhism, Hinduism and contemporary ‘yogic traditions’.² A claim challenged by scholars such as Robert Sharf.³ Similarly, the term *Dharma* has several meanings in Buddhism and Hinduism, reflecting their different world views. In classical Buddhism, *Dharma* is consistent with scriptural knowledge, but in Hinduism, *Dharma* is usually regarded as the cosmic law, also reflected by several earthly conventions such as social order.⁴ Attempting to create a bridge between the principles of science and Buddhist and Hindu concepts probably indicates a departure from the normal

¹ Jon Kabat-Zinn, ‘Some Reflections on the Origins of MBSR, Skillful Means, and the Trouble with Maps’, *Contemporary Buddhism*, 12.1 (2011), 281–306, p. 289 <<https://doi.org/10.1080/14639947.2011.564844>>. The use of Dharma in the context can be taken to mean truth or law in a belief-based context. For a more detailed discussion of Kabat-Zinn’s uses of the term Dharma, see Ville Husgafvel, ‘The ‘Universal Dharma Foundation’ of Mindfulness Based Stress Reduction: Non-Duality and Mahayana Buddhist Influences in the Work of Jon Kabat-Zinn.’, *Contemporary Buddhism*, 19.2 (2018), 275–326. <<https://doi.org/10.1080/14639947.2018.1572329>>.

² Jon Kabat-Zinn, ‘An Outpatient Program in Behavioural Medicine for Chronic Pain Patients Based on the Practice of Mindfulness Meditation: Theoretical Considerations and Preliminary Results’, *General Hospital Psychiatry*, 4.1 (1982), 33–47, p. 34 <[https://doi.org/10.1016/0163-8343\(82\)90026-3](https://doi.org/10.1016/0163-8343(82)90026-3)>.

³ Robert H. Sharf, ‘Is Mindfulness Buddhist? (And Why It Matters)’, *Transcultural Psychiatry*, 52.4 (2015), 470–84 <<https://doi.org/10.1177/1363461514557561>>.

⁴ The meanings of the term cannot be restricted to those presented here, I offer one example of the different ontological significances in belief-based traditions. ‘Dharma, n.’, *OED Online* (Oxford University Press) <<https://www.oed.com/view/Entry/51704>> [accessed 31 August 2021].

procession of science. Research by Elaine Ecklund and Jerry Park, and later Denny Thomas demonstrated that while scientists have religious convictions, these tend not to influence scientific practice.⁵ Although an under-researched area, it may not be possible to combine or bridge the scientific method with non-positivist concepts from religious traditions. As a science trained spiritual practitioner, I propose to avoid normative concerns about the merits of spiritual or scientific knowledge in this paper. Rather, my goal is to describe the processes through which mindfulness became embedded in medico-scientific domains.

Traditional scientific methods can easily explore the effects of spiritual practices by measuring the impact of meditation on different physiological responses such as brainwaves, heart rate or oxygen consumption. The first evidenced meditation experiment, described by William Grey Walter in 1938, used electroencephalographic (EEG) measurements.⁶ And although there were relatively few studies over the following three decades, they all tended to follow a positivist rationale, such as Akira Kasamatsu and Tomio Hirai's 1966 study of Zen practitioners.⁷ Although this paper concentrates on Kabat-Zinn's 1979 mindfulness project (later called MBSR), his work should be seen in a wider historical context.⁸ Up to the late 1960s, the study of meditation was primarily a discipline of discovery, an attempt to understand how meditation changed human physiology. However, in the early 1970s, a new approach to the research described here as medicalised meditation was created by Robert Wallace's demonstration of the clinical benefits of Transcendental Meditation (TM), a Hindu meditation practice.⁹

This paper concentrates on Kabat-Zinn's 1982 journal article, which follows the trajectory of earlier forms of medicalisation meditation. The boundaries between belief, science and health were

⁵ For recent research in this field, see Elaine Howard Ecklund, and Jerry Z. Park, 'Conflict Between Religion and Science Among Academic Scientists?', *Journal for the Scientific Study of Religion*, 48.2 (2009), 276–92 <<https://doi.org/10.1111/j.1468-5906.2009.01447.x>>. A recent study in India also confirms that scientists keep their spiritual and belief-based practices separate. Renny Thomas, 'Beyond Conflict and Complementarity Science and Religion in Contemporary India', *Science, Technology and Society*, 23.1 (2018), 47–64 <<https://doi.org/10.1177/0971721817744444>>.

⁶ William Grey Walter, 'Critical Review: The Technique and Application of Electro-Encephalography', *Journal of Neurology, Neurosurgery & Psychiatry*, 1.4 (1938), 359–85 <<https://doi.org/10.1136/jnnp.1.4.359>>.

⁷ Akira Kasamatsu and Tomio Hirai, 'An Electrocephalographic Study on the Zen Meditation (Zazen)', *Psychiatry and Clinical Neurosciences*, 20.4 (1966), 315–36 <<https://doi.org/10.1111/j.1440-1819.1966.tb02646.x>>.

⁸ Kabat-Zinn, 'An Outpatient Program in Behavioural Medicine'.

⁹ In his PhD thesis, Wallace was relatively open about his links to the TM organisation and attempts to validate ancient Hindu concepts, Robert Keith Wallace, 'The Physiological Effects of Transcendental Meditation: A Proposed Fourth Major State of Consciousness' (unpublished PhD, University of California, Los Angeles) <<https://www.proquest.com/docview/302498478/citation/99CC6438A83447CDPQ/1>> [accessed 6 July 2021].

shifted in the late 1950s through the development of Zen Psychotherapy.¹⁰ Wallace first used the experimental method to illustrate the health benefits of TM in 1970.¹¹ Then in 1972, Wallace collaborated with Herbert Benson, an experienced health researcher, to further investigate TM practitioners.¹² In 1984 Benson and others published the relaxation response hypothesis, a rationale describing the health benefits of spiritual practices.¹³ Wallace and Kabat-Zinn were embedded in both scientific and spiritual communities. Wallace was an influential member of the TM group at UCLA, and Kabat-Zinn was involved with Hindu and Buddhist spiritual practices.¹⁴ This reshaping of the relationships between religion and science consolidated new approaches in meditation research.

Scientists attempting to demonstrate the curative potential of medicalised meditation frequently emphasised clinical benefits rather than establishing underlying causal mechanisms. Even Benson's more scientific insights were built on subjective accounts: 'Subjective and objective data exist which support the hypothesis that an integrated central nervous system reaction, the "relaxation response," underlies this altered state of consciousness.'¹⁵ In medicalisation, it appears that a pragmatic rather than a scientific relationship between meditation, belief and health was nurtured.

A potential for conflict between spiritual convictions and scientific practice concerned academics engaged in traditional meditation research. Some scientists reported that medicalised approaches frequently made dramatic claims built on flawed methodologies. Michael West's 1979 review of meditation research concluded: 'Unfortunately, enthusiasm for TM has tended to lead to biased presentations and misleading explanations.'¹⁶ In 1984, David Holmes challenged a fundamental pillar of the medicalised movement, that meditation mediated arousal and thus could increase relaxation: 'In view of those factors,

¹⁰ Erich Fromm, D. T. Suzuki and Richard De Martino, *Zen Buddhism and Psychoanalysis*, Zen Buddhism and Psychoanalysis (Oxford, England: Harper, 1960), pp. viii, 180.

¹¹ Robert Keith Wallace, 'Physiological Effects of Transcendental Meditation', *Science*, 167.3926 (1970), 1751–54 <<https://doi.org/10.1126/science.167.3926.1751>>. For the relaxation response, see Herbert Benson, John F. Beary, and Mark P. Carol, 'The Relaxation Response', *Psychiatry*, 37.1 (1974), 37–46 <<https://doi.org/10.1080/00332747.1974.11023785>>.

¹² Robert Keith Wallace and Herbert Benson, 'The Physiology of Meditation', *Scientific American*, 226.2 (1972), 84–91.

¹³ Benson, Beary and Carol.

¹⁴ For details of Wallace's involvement with TM at UCLA, see Jean Murphy, 'Transcendental Idea to Meditate About', *Los Angeles Times (1923–1995)* (Tribune Publishing Company, LLC, 1968) <<http://www.proquest.com/hnplatimes/docview/155827967/abstract/333C7D2182EC4376PQ/1>> [accessed 5 July 2021]. Kabat-Zinn writes about his early engagement with spiritual meditation in Kabat-Zinn, 'Some Reflections on the Origins of MBSR, Skillful Means, and the Trouble with Maps'.

¹⁵ Benson, Beary and Carol. p.37.

¹⁶ For a summary, see Michael West, 'Meditation.', *The British Journal of Psychiatry: The Journal of Mental Science*, 135.5 (1979), 457–67, p. 458 <<https://doi.org/10.1192/bjp.135.5.457>>.

it is important that we recognise that within the existing research there is no evidence that meditation is more effective for reducing somatic arousal than is simple resting.¹⁷ Despite these warning signs, the pragmatic approach adopted by medicalised mindfulness remained. When MBIs began to attract significant scientific interest after 2000, strategic reviews continued to highlight methodological and theoretical problems.¹⁸ A 2018 review by Nicholas Van Dam and others illustrated flaws in scientific claims reminiscent of those made forty years earlier.¹⁹ Van Dam and fourteen co-authors stated: ‘misinformation and poor methodology associated with past studies of mindfulness may lead public consumers to be harmed, misled, and disappointed.’²⁰ Despite the growing importance of mindfulness in contemporary society, few attempts have explained how meditation research entered this problematic trajectory.

The Rise of Medicalised Meditation

Wallace began the medicalisation movement by claiming health benefits for TM in 1970.²¹ His work increased popular and scientific interest in meditation. But Wallace’s original findings, published in the journal *Science* went beyond the evidence: ‘Transcendental meditation has been reported to have practical therapeutic value in relieving mental and physical tension. Its value in the alleviation of drug abuse has been suggested, and its value in controlling arterial blood pressure is being investigated.’²² The study had a scientific methodology, but Wallace also based his rationale on spiritual teachings.²³ A collaboration with Benson put Wallace’s approach on a more scientific footing.²⁴ By the mid-1970s, Wallace was working for the TM organisation, and Benson led medicalisation in a new direction.²⁵ Working

¹⁷ David S. Holmes, ‘Meditation and Somatic Arousal Reduction: A Review of the Experimental Evidence’, *American Psychologist*, 39.1 (1984), 1–10 <<https://doi.org/10.1037/0003-066X.39.1.1>>.

¹⁸ For an illustration of this paradox, see Ruth A. Baer, ‘Mindfulness Training as a Clinical Intervention: A Conceptual and Empirical Review’, *Clinical Psychology: Science and Practice*, 10.2 (2003), 125–43 <<https://doi.org/10.1093/clipsy.bpg015>>.

¹⁹ Nicholas T. Van Dam et al., ‘Mind the Hype: A Critical Evaluation and Prescriptive Agenda for Research on Mindfulness and Meditation’, *Perspectives on Psychological Science*, 13.1 (2018), 36–61 <<https://doi.org/10.1177/1745691617709589>>.

²⁰ Van Dam et al., p.47

²¹ Wallace, ‘Physiological Effects of Transcendental Meditation’.

²² *Ibid.*, p. 1754.

²³ Wallace refers to the work of a spiritual teacher in his introduction, see Wallace, ‘Physiological Effects of Transcendental Meditation’. p. 1752.

²⁴ Wallace and Benson.

²⁵ According to numerous sources, ‘Dr. Wallace was the founding President of Maharishi International University.’ Maharishi International University, ‘Robert Keith Wallace | Faculty of Physiology & Health’, 2021 <<https://www.miu.edu/academic-departments/physiology-and-health/introduction/faculty-staff/robert-keith-wallace>> [accessed 29 September 2021].

with others, Benson claimed in 1974 that many spiritual practices offered health benefits by inducing the relaxation response.²⁶

In 1979 Kabat-Zinn built on the work of both Wallace and Benson by adapting mindfulness meditation to treat patients suffering from chronic pain. Kabat-Zinn's use of meditation in an outpatient clinic marked the wider acceptance of the medicalisation concept; meditation had become a medical treatment.²⁷ Wallace's advocacy for TM, Benson's theory of the relaxation response, and Kabat-Zinn's claims for MBSR all tended to scientific pragmatism, but in different ways.²⁸ They used science to validate the benefits of belief-based practices (or their derivatives) rather than providing robust scientific explanations of underlying causes.²⁹ Together, the scientific investigation of TM, the relaxation response and MBSR reflected a changing relationship between belief and science through the use of meditation as health technology. Analysis of early mindfulness peer-reviewed studies highlights common components in medicalisation and helps to explain the current location of MBIs.

The Medicalisation of Mindfulness

Gary Deatherage used mindfulness in a psychotherapeutic setting in 1975, four years before Kabat-Zinn launched his mindfulness approach.³⁰ The differences between the Deatherage and Kabat-Zinn methods informs our understanding of MBSR. Deatherage adopted a traditional meditation practice, largely within its original (belief-based) theoretical framework as a therapy. Conversely, Kabat-Zinn claimed to have developed a hybrid synthesis of multiple mindfulness practices: 'Mindfulness meditation has roots in Theravada Buddhism where it is known as *sattipatana vipassana* or Insight Meditation, in Mahayana Buddhism in Soto Zen practices, and in the yogic traditions as expressed in the contemporary writings of

²⁶ Benson, Beary, and Carol.

²⁷ Kabat-Zinn, 'An Outpatient Program in Behavioural Medicine'.

²⁸ Russell E. Glasgow, and William T. Riley, 'Pragmatic Measures: What They Are and Why We Need Them', *American Journal of Preventive Medicine*, 45.2 (2013), 237–43 <<https://doi.org/10.1016/j.amepre.2013.03.010>>.

²⁹ For example, Benson published many scientific investigations to demonstrate the curative potential of the four elements of the relaxation response, but not the original spiritual meditation practices he claimed have elicited the relaxed state.

³⁰ Gary Deatherage, 'The Clinical Use of "mindfulness" Meditation Techniques in Short-Term Psychotherapy', *The Journal of Transpersonal Psychology*, 7.2 (1975). The MBSR approach can be found at Kabat-Zinn, 'An Outpatient Program in Behavioural Medicine'.

J. Krishnamurti, Vimila Thakar and Nisargadatta Maharaj.³¹ Thus, MBSR was introduced as a transcendent pan-spiritual concept integrating practices from ontologically distinct knowledge traditions. During the 1970s, Kabat-Zinn was not the only scientist who made sweeping generalisations about ancient Eastern religious traditions; the same approach can be seen in the work of Benson and the physicist Fritjof Capra.³²

In 1979 Kabat-Zinn launched a ‘service’ to treat patients suffering from chronic pain at the outpatient Stress Reduction and Relaxation Program (SR&RP) at the University of Massachusetts Hospital (UMH).³³ The first detailed account of a pilot study based on the results from the clinic was published in 1982. Analysing Kabat-Zinn’s 1982 paper, a similar pattern to Wallace’s 1970 article is observed.³⁴ In particular, in both accounts, anecdotes link scientific claims to spiritual knowledge. For example, Kabat-Zinn uses pain management practices from Buddhist texts to position mindfulness as a treatment: ‘It therefore seemed reasonable to hypothesise that insights stemming from the observation of pain arising during meditation might serve as a model for developing a testable intrapsychic strategy that patients may use for coping with chronic pain.’³⁵

Kabat-Zinn discussed scientific literature and concepts throughout his 1982 paper, but these references tended to offer generalised support for the use of mindfulness, often in abstract ways: ‘There exist dramatic accounts in the literature of the complete uncoupling of the sensory from the affective and interpretive components of pain, with resulting loss of alarm reactivity and pain behaviour.’³⁶ But the studies cited include brain surgery techniques wholly unrelated to meditation. In addition, scientific methods described in the paper’s ‘Experiment’ section are used only to measure clinical effectiveness. The study evaluated changes to self-reported pain but told us very little about underlying physiological processes. The preliminary results were impressive, but there was, in conclusion, a note of caution: ‘While this work does not prove that the meditation practice is directly responsible for these changes,

³¹ Kabat-Zinn, ‘An Outpatient Program in Behavioural Medicine’, p. 34.

³² See Benson, Beary, and Carol; Fritjof Capra, ‘Modern Physics and Eastern Mysticism’, *Journal of Transpersonal Psychology*, 8.1 (1976), 20–40.

³³ The term ‘service’ is used in the introduction of this paper. Kabat-Zinn, ‘An Outpatient Program in Behavioural Medicine’, p. 33.

³⁴ The rationales of both Wallace and Kabat-Zinn draw on spiritual teachings and anecdotes from non-positivist sources. See Wallace, ‘Physiological Effects of Transcendental Meditation’.

³⁵ Kabat-Zinn, ‘An Outpatient Program in Behavioural Medicine’, p. 35.

³⁶ *Ibid.*, p. 36.

it does suggest it.³⁷ Kabat-Zinn and others continued investigating the self-regulation of pain, publishing more positive claims up to the four-year follow-up study in 1986.³⁸

MBSR and Its Scientific Foundations

A discussion of the scientific evidence supporting MBSR offers insights into the long-term trajectory of MBIs. In the 1982 paper, Kabat-Zinn argued for the importance of motivational and cognitive factors in pain management.³⁹ In particular, Ronald Melzack and Campbell Perry's experiments that found: 'that chronic, pathological pain can be reduced in a significant number of patients by means of a combination of alpha-feedback training, hypnotic training, and placebo effects.'⁴⁰ However, many of the studies cited by Kabat-Zinn in his literature review had no direct link to the clinical use of mindfulness. The real focus of the 1982 paper was the clinical effects of the treatment. The Kabat-Zinn approach used scientific methods to collect and process data but not to establish a causal link between meditation and the reduced experience of pain.

Patients attended the SR&RP clinic for a two-hour weekly session for ten weeks, where they were taught 'three mindfulness meditation practices.'⁴¹ This treatment was supplemented by home practice. Kabat-Zinn described his technique as a combination of breathing and 'sweeping' meditations with posture yoga exercises. Strangely, Kabat-Zinn did not consider yoga as mindfulness: 'Although hatha yoga per se is not a traditional mindfulness technique, it was taught emphasising mindfulness.'⁴² There is no scientific explanation provided of why these methods were selected and the mental and physical processes they individually and collectively mediated. There was clearly a conviction or belief at work that these interventions would improve patient outcomes. The before and after the experience of pain from fifty-one patients was recorded using five different pain indices. In addition, non-pain data across

³⁷ Ibid., p. 48.

³⁸ Jon Kabat-Zinn et al., 'Four-Year Follow-Up of a Meditation-Based Program for the Self-Regulation of Chronic Pain: Treatment Outcomes and Compliance', *The Clinical Journal of Pain*, 2.3 (1986), 159-774.

³⁹ Ronald Melzack, and Patrick D. Wall, 'Psychophysiology of Pain', *International Anesthesiology Clinics*, 8.1 (1970), 3-34.

⁴⁰ Ronald Melzack, and Campbell Perry, 'Self-Regulation of Pain: The Use of Alpha-Feedback and Hypnotic Training for the Control of Chronic Pain', *Experimental Neurology*, 46.3 (1975), 452-69 <[https://doi.org/10.1016/0014-4886\(75\)90119-3](https://doi.org/10.1016/0014-4886(75)90119-3)>.

⁴¹ Kabat-Zinn, 'An Outpatient Program in Behavioural Medicine', p. 37.

⁴² Ibid., p. 35.

six fields was also captured, the effect sizes were established, and the reduction in self-reported pain was found to be significant:

At 10 weeks, 65% of the patients showed a reduction of greater than or equal to 33% in the mean total Pain Rating Index (Melzack) and 50% showed a reduction of greater than or equal to 50%. Similar decreases were recorded on other pain indices and in the number of medical symptoms reported.⁴³

Kabat-Zinn noted that the pain reduction was comparable to Melzack and Perry's results from their alpha-feedback study.⁴⁴ However, little scientific insight into the relationship between the treatment and positive patient outcomes was provided. Without causal explanations, we cannot be certain why patients reported changes, but the uncontrolled and self-reported data carried risks that the findings might not be reliable. In reviewing non-medical treatment for chronic pain in 1988, including the 1982 mindfulness study, Marguerite Malone and Michael Strube made this very point.⁴⁵ They also stressed that impressive claims were frequently made in preliminary studies.⁴⁶ Further, without adequate control measures, the results for 'pill placebo' were only marginally lower than those reported for the category of treatment that included mindfulness. In 1986 the mindfulness four-year follow-up study was published, the pattern from the 1982 paper continued. Uncontrolled experiments with methodological limitations provided the basis for making positive preliminary claims. Although in the main body of that study, scientists acknowledged they did not know how the intervention changed the experience of pain:

Although an association between compliance and the meditation practices and improvement in status was found, quantitative measures of therapeutic efficacy cannot be ascribed to individual components of the intervention, including the meditation techniques, in this type of study.⁴⁷

⁴³ Ibid., p. 33.

⁴⁴ Melzack and Perry.

⁴⁵ Marguerite D. Malone, and Michael J. Strube, 'Meta-Analysis of Non-Medical Treatments for Chronic Pain', *Pain*, 34.3 (1988), 231–44 <[https://doi.org/10.1016/0304-3959\(88\)90118-2](https://doi.org/10.1016/0304-3959(88)90118-2)>.

⁴⁶ Malone and Strube, p. 236.

⁴⁷ Kabat-Zinn et al., p. 171.

Conclusions

From a historical perspective, Kabat-Zinn's clinical use of mindfulness formed part of a movement to medicalise meditation, supporting a new direction in research. Medicalisation brought belief-based practices into a close relationship with scientific methods. There is also evidence that some meditation scientists were committed to spiritual and scientific goals. Although this is an under-researched area, convergence between religious and positivist concepts may have influenced the scientific trajectory of MBIs. Medicalisation appears to have privileged curative benefits above robust scientific explanations of causal processes. This new pragmatic trajectory frequently delivered impressive preliminary claims. However, traditional scientific reviews often rejected these positive findings based on methodological limitations.

Claims made by Kabat-Zinn about the roots of mindfulness and its operational components lack evidential support. However, during the 1970s, other scientists also made generalisations about Eastern religious traditions to support their research, and Kabat-Zinn's approach can be seen in this broader context. Kabat-Zinn's 1982 account does not offer a satisfying scientific explanation for the use of mindfulness or its claimed curative effects. A similar pattern is seen in the 1986 mindfulness review when scientists could not identify why the experience of pain declined. The methodological and theoretical problems evidenced in mindfulness research from this period may have continued to the present era. Although more research is needed, the uncertainties in published studies suggest that MBSR may have introduced an ontological conflict into medicalised mindfulness by combining spiritual and scientific knowledge. The pattern of positive initial claims based on limited methodologies supports the characterisation of early mindfulness research as promising but not proven.

However, simply repeating claims of methodological and theoretical limitations may be missing a wider point. Kabat-Zinn developed a clinical intervention based on values beyond the scientific method. A lack of causal understanding established MBSR as a pragmatic intervention; thus, scientific limitations in MBI research are unsurprising. If medicalised meditation reflects Kabat-Zinn's integrated spiritual and

scientific insights, contemplative science may need new theoretical frameworks to support more reliable systematic evaluations.

The different accounts of mindfulness research written by Kabat-Zinn for humanities and scientific audiences may interest transdisciplinary researchers. For example, in his 2011 account in *Contemporary Buddhism*, Kabat-Zinn reveals concepts and motivations absent from his scientific papers, such as the bridge between science and *Dharma*.⁴⁸ This is an area that also requires further investigation, but as a preliminary finding, it appears that a unidisciplinary perspective cannot fully explain the scientific deployment of MBSR.

⁴⁸ Kabat-Zinn, 'Some Reflections on the Origins of MBSR, Skillful Means, and the Trouble with Maps'. p. 289.

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