

Teaching mindfulness in medical school: where are we now and where are we going?

Patricia L Dobkin & Tom A Hutchinson

OBJECTIVES Mindfulness has the potential to prevent compassion fatigue and burnout in that the doctor who is self-aware is more likely to engage in self-care activities and to manage stress better. Moreover, well doctors are better equipped to foster wellness in their patients. Teaching mindfulness in medical school is gaining momentum; we examined the literature and related websites to determine the extent to which this work is carried out with medical students and residents.

METHODS A literature search revealed that 14 medical schools teach mindfulness to medical and dental students and residents.

RESULTS A wide range of formats are used in teaching mindfulness. These include simple lectures, 1-day workshops and 8–10-week programmes in mindfulness-based stress

reduction. Two medical schools stand out because they have integrated mindfulness into their curricula: the University of Rochester School of Medicine and Dentistry (USA) and Monash Medical School (Australia). Studies show that students who follow these programmes experience decreased psychological distress and an improved quality of life.

CONCLUSIONS Although the evidence points to the usefulness of teaching mindful practices, various issues remain to be considered. When is it best to teach mindfulness in the trajectory of a doctor's career? What format works best, when and for whom? How can what is learned be maintained over time? Should mindfulness training be integrated into the medical school core curriculum?

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Department of Medicine, McGill Programmes in Whole Person Care, Gerald Bronfman Centre, McGill University, Montreal, Quebec, Canada

Correspondence: Patricia Dobkin, McGill Programmes in Whole Person Care, McGill University, 546 Pine Avenue West, Gerald Bronfman Centre, 3rd Floor, Montreal, Quebec H2W 1S6, Canada. Tel: 00 1 514 398 2298;
E-mail: patricia.dobkin@mcgill.ca

'Engrossed late and soon in professional cares – you may so lay waste your powers that you may find, too late, with hearts given way, that there is no place in your habit-stricken souls for those gentler influences which make life worth living.' William Osler, 1899¹

INTRODUCTION

What is mindful medical practice?

Epstein and his colleagues have published extensively on mindful medical practice since the late 1990s.^{2,3} They regard it as a logical extension of the concept of reflective practice. The goals of mindful practice, according to Epstein, 'are to become more aware of one's own mental processes, listen more attentively, become flexible, and recognise bias and judgements, and thereby act with principles and compassion'.² In a two-part series of articles, Epstein^{4,5} presents mindful practice in action (i.e. competence in relationship-centred care) and describes how to cultivate 'habits of mind'. This approach is consistent with professionalism;⁶ excellent clinicians embody the elements described by Epstein in that they demonstrate attentive observation, critical curiosity, a beginner's way of thinking, and presence.^{7,8} Moreover, mindfulness has the potential to prevent compassion fatigue and burn-out because the doctor who is self-aware is more likely to engage in self-care activities and to manage stress better.

METHODS

Where is mindfulness taught?

As much of the information on mindfulness taught in medical school is not published or accessible through traditional means, a search of the grey literature was conducted. The Google search engine was used to identify websites of medical schools that include mindfulness programmes within the curriculum or offer courses that teach mindfulness. This identified 14 medical and dental schools. An extensive search was then performed within those medical schools' websites to gather any relevant information; this search covered newsletters and fliers for courses, online news articles, online seminar recordings, and programme descriptions. In some cases, published journal articles describing specific mindfulness programmes in medical schools were

available (on programmes at Monash University in Australia and Dalhousie University in Canada), but this was rare. Programme directors or course coordinators were contacted for more information. Accessible medical school course catalogues and course curricula were also searched. Table 1 summarises the information found with regard to where and how mindfulness is taught to medical and dental students, as well as to residents.

RESULTS

The first mindfulness-based stress reduction (MBSR) programme for medical school students (i.e. delivered as part of the curriculum, not simply as part of a research study) was administered at the University of Massachusetts Medical School; it has been offered to students in Years 1 and 2 since 1985. Monash University, in Australia, is one of the few medical schools to fully integrate mindfulness in a comprehensive programme for all students (as of 2002). The Stress Release Programme, one aspect of the Monash Health Enhancement Programme, has been offered since 1991 as an elective course.⁹ The University of Rochester School of Medicine and Dentistry has also been successful in teaching students an adapted version of MBSR since 2007 and includes various teaching modules on mindfulness throughout its 4-year curriculum. As Table 1 shows, various teaching formats for delivering mindfulness training are found in medical schools. For example, at Dalhousie University, Lovas *et al.*¹⁰ describe an introductory lecture entitled 'Mindfulness in Dentistry', which is delivered to Year 1 dental students, and an elective course delivered to health care professionals using the University of Massachusetts model; students are given first priority to enrol. Residents, who generally represent a highly stressed group, have been offered various formats of mindfulness training at the University of Toronto and the University of North Carolina at Chapel Hill.

IS THERE EVIDENCE FOR EFFICACY?

Thus far, reports on the impact of such training have been published for pre-medical and medical students,^{11–13} practising doctors¹⁴ and other health care professionals.^{15–17} In general, results indicate that such programmes are beneficial in terms of reducing negative emotions and stress, as well as enhancing mindfulness, empathy and self-compassion. For example, Hassed *et al.*¹⁸ reported that

Table 1 Mindfulness courses in medical schools

Where	Instructors	Course description	Website
Brown University Concentration in Contemplative Studies, Warren Alpert School of Medicine Providence, RI USA	Dr M Smith Dr Willoughby Britton Dr Gary Epstein-Lubow Dr Harold D Roth	Mindfulness in Clinical Practice: a primer for medical students At Brown University, all pre-clinical (Years 1 and 2) medical students are given the opportunity to take an elective course in the clinical applications of mindfulness. The course lasts 10 weeks and meets for 2–3 hours/week. It includes an introduction to mindfulness meditation and the study of clinical research articles on mindfulness. In addition, up to five medical students each year can apply to join the elective 'Scholarly Concentration' in Contemplative Studies that provides further focused study of these subjects, the opportunity to develop a contemplative practice, and places students with 'clinical contemplative mentors' in the community to guide their final projects, completed during Year 4. Some students who have chosen this programme have also taken an 8-week MBSR course (offered to doctors) as part of their final projects, which can range from original research, to a literature review, to designing new courses for medical students on contemplative medicine	http://brown.edu/academics/medical/education/concentrations/contemplative-studies
Dalhousie University School of Dental Hygiene, Faculty of Dentistry Faculty of Medicine Halifax, NS Canada	Dr John Lovas Professor Nancy Neish Dr Elisabeth Gold	Mindfulness for Health Care Professionals The elective is an 8-week MBSR-style workshop, 90 minutes per week, offered free of charge not only to dental students (who get first priority), but to all Dalhousie students, staff and faculty members. Dr Lovas and Professor Neish run two of these each year, one starting in late September, the other starting in late January. Attendance is entirely voluntary, with the single stipulation that participants must agree to attend, if possible, all of the sessions. Dr Lovas also gives 'wellness seminars' to Year 1 students in the dental and dental hygiene programmes, in which the emphasis is placed on the students' roles as healers. This includes a personal commitment to live a healthy, balanced, holistic life that embodies holistic health. In addition, Dr Elisabeth Gold, from the Department of Family Medicine, guides an open, weekly drop-in mindfulness meditation practice. This initiative began in 2012 and around 10 people attend weekly. There are also occasional stand-alone, extracurricular workshops on mindfulness, at student requests	http://www.dentistry.dal.ca/Mindfulness/index.html

Table 1 (Continued)

Where	Instructors	Course description	Website
Drexel University College of Medicine Philadelphia, PA USA	Dr Steven Rosenzweig	Mindfulness for Personal and Professional Wellbeing This course has been taught since 2008. It is a for-credit, professional formation elective, open to all students in Years 1 and 2, and offered in both autumn and winter of the academic year. Generally, course enrolment is around 70 students per year. The course is based on the MBSR curriculum and comprises eight 90-minute classes given once weekly. Inquiry and guided practice are incorporated into each class. Dr Rosenzweig teaches body scan, awareness of breath, mindful yoga, three-minute breathing space, awareness of sound, eating meditation, walking meditation, loving kindness meditation, mindful communication, expanding awareness and open awareness	http://webcampus.drexelmed.edu/professionalism/Mindfulness_elective.pdf
Duke University Duke Integrative Medicine Durham, NC USA	Dr Michelle Bailey Dr Jeff Brantley Dr Karen Kingsolver	Integrative Medicine Electives The Duke Integrative Medicine programme allows medical students two opportunities throughout their 4 years to learn about mindfulness. Year 2 medical students are offered the opportunity to shadow a doctor for 2 weeks and to learn about whole person care. They receive mindfulness instruction through personalised group sessions with the director of MBSR, Dr Jeffrey Brantley. Year 4 students are offered a chance to further explore the mindfulness topics introduced in the Year 2 elective over the course of 4 weeks The REFUGE programme: A Mindfulness-Based Stress Management and Practice Enrichment Service for Duke doctors and trainees Duke doctors, including residents and fellows, are invited to participate in free of charge, ongoing sessions, designed to help manage the delicate balance of academic and hospital demands. The REFUGE provides the opportunity to learn skills for 'being present' and managing stress Instruction is offered in a variety of evidence-based techniques designed to support doctors' well-being and stress management •Sessions are designed in a 'drop-in' format; attendance is welcome, whenever time is available •Doctors' spouses (or significant others) are invited to attend open sessions on Tuesday evenings •No experience, self-introduction or speaking are required •No long-term commitment is required	http://www.dukeintegrativemedicine.org/classes-workshops-and-education/undergraduate-medical-education

Table 1 (Continued)

Where	Instructors	Course description	Website
Georgetown University School of Medicine Washington, DC USA	Nancy Harazduk, MEd, MSW Aviad Haramati, PhD	Mind–Body Medicine: An Experiential Introduction The Mind–Body Medicine course has been offered to medical, graduate and law students, as well as to interested faculty members since 2002 as a result of a grant from the National Institutes of Health, Center of Complementary and Alternative Medicine. Classes meet in a 2-hour session, once per week, for 11 weeks with two faculty members who co-facilitate the classes. The goal of the course is to foster self-awareness leading to self-care and personal growth, by immersing students in a safe, confidential, non-judgemental environment in which self-exploration and self-reflection are appreciated and encouraged. Over the 11 weeks, students practise various mind–body medicine skills including self-awareness, meditation, guided imagery, biofeedback, art and movement. Students have the opportunity to practise compassionate listening and to share what they are learning about mind–body medicine and about themselves	http://som.georgetown.edu/medicaleducation/mindbody/
University of Iowa Hospital and Clinics Department of Psychiatry in collaboration with the UI Carver College of Medicine and College of Dentistry Iowa City, IA USA	Dr Trudy Goldman Bev Klug, MA, LMFT Chris Klug, MA, CT	Mindfulness for Healthcare Graduate Students Medical and dental graduate students of any year can register in a non-credit mindfulness course at the University of Iowa. It is modelled after the MBSR programme at the University of Massachusetts. The course was established in 2006 as a result of interest in the College of Medicine and particularly the Medical Student Counselling Service for more wellness offerings for medical students. The College of Dentistry has also encouraged its students to participate since 2008. The course is currently offered once per year in the second semester The course is modelled after MBSR and includes all of the practices in that programme. Adaptations of the standard MBSR course are that weekly classes are shorter in duration (1.5 hours), recorded home practices are shorter (20 minutes) and the retreat is optional. Content on mindfulness and stress includes the information presented in MBSR, as well as focused discussion and informal practices relevant to the current lives of the students. The University of Iowa has multiple MBSR courses that follow the original model and health care students have the option to participate in those. Follow-up groups are also available upon completion of an 8-week programme	http://www.uihealthcare.org/otherservices.aspx?id=21579

Table 1 (Continued)

Where	Instructors	Course description	Website
Jefferson Medical College Mindfulness Institute, Jefferson–Myrna Brind Center of Integrative Medicine Philadelphia, PA USA	Dr Diane Reibel Dr Aleeze Moss	Mindfulness-Based Stress Reduction for Medical Students This was the first programme to be offered at the Center for Integrative Medicine at Jefferson University in 1996. It was given as a 10-week sophomore seminar series Through the years, mindfulness programmes for medical students have been adapted to meet the needs of the medical curriculum. Currently, a 6-week MBSR elective for Year 1 medical students and a 4-week Introduction to Mindfulness programme open to all medical students are offered	www.jeffersonhospital.org/mindfulness
University of Massachusetts Medical School Center for Mindfulness in Medicine, Health Care and Society, Division of Preventative and Behavioral Medicine Worcester, MA USA	Dr Saki Santorelli	The Contemplative Mind in Medicine: A Stress Reduction Programme for Medical Students The Center for Mindfulness in Medicine, Health Care, and Society (CFM) has offered an MBSR course for Year 1 and 2 medical students since 1985. For the past 12 years, the course has been taught by Dr Saki Santorelli and is now called 'The Contemplative Mind in Medicine' The programme offers medical students: (i) a forum for learning effective MBSR skills; (ii) a safe, supportive environment in which medical students are offered an opportunity to discuss their experiences of the early years of medical education; (iii) a development-based orientation to stress, coping, and significant life transitions intended to assist students in the cultivation and maintenance of a stable, yet flexible sense of self during their early years of medical training, and (iv) a first-hand experience of mind/body approaches that may provide a foundation for the development of a more participatory and preventative orientation toward patient care in their future medical practices	http://www.umassmed.edu/Content.aspx?id=41330&linkidentifier=id&itemid41330
McGill University McGill Programmes in Whole Person Care, Faculty of Medicine Montreal, QC Canada	Dr Patricia Dobkin Dr Tom Hutchinson Dr Stephen Liben	Mindful Medical Practice Started in 2009 as a part of the Physicianship Programme at McGill University, Mindful Medical Practice is an elective offered to Year 4 medical students. It is adapted from the MBSR course, made to fit the structure of a 4-week, bi-weekly elective. The course also integrates insight dialogue (Kramer) and communication exercises (Satir). Mindfulness is also integrated into doctorship lectures throughout the 4 years	http://www.mcgill.ca/wholepersoncare/medicalstudents/

Table 1 (Continued)

Where	Instructors	Course description	Website
Monash University Health Enhancement Programme (HEP) Melbourne, Vic Australia	Dr Craig Hassed	Health Enhancement Programme (HEP): Stress Release Programme and ESSENCE The HEP at Monash is comprised of the Stress Release Programme and the ESSENCE lifestyle programme, where ESSENCE stands for: Education, Stress management, Spirituality, Exercise, Nutrition, Connectedness, and Environment The Stress Release Programme was originally developed as a mindfulness-based training programme for general practitioners and has been offered as an elective in the Monash medical curriculum since 1991, and, with the creation of HEP in 2002, has officially been integrated as part of the core, assessable curriculum since then. It incorporates mindfulness meditation practice and mindfulness-based cognitive tasks	http://ohs.adm.monash.edu.au/conference/docs/presentations/CraigHassed.pdf http://www.sciencedirect.com/science/article/pii/S155083070800284X
University of Montreal Faculty of Medicine Montreal, QC Canada	Dr Hughes Cormier Dr Ramses Wassef	Health Enhancement and Mindfulness Programme At the University of Montreal, mindfulness and wellness courses are offered in the pre-medical year, the first and second pre-clinical years, and the first and second clerkship years. The programme was developed to prevent burnout and to cultivate resilience and performance in medical practice and personal life There is a mandatory course, which consists of a total of 10 30-minute sessions. Each session includes a 15-minute lecture about Monash's ESSENCE model and 15 minutes of mindfulness guidance (mini-body scan and mindful breathing). The five student cohorts are each given two sessions per year, one in autumn and one in winter for a total of 10 sessions over the 5-year undergraduate medical curriculum Since 2011, an optional mindfulness course has also been offered, consisting of 16 sessions. Each class includes a 30-minute mindfulness meditation and simple hatha yoga	http://www.med.umontreal.ca/doc/communaute_facultaire/baer/medecine_pleine_conscience.ppt http://www.expertise-sante.com/modules/AxialRealisation/img_repository/files/documents/Colloque2_Sante_des_medecins/PPT_H_CORMIER.pdf
Oakland University William Beaumont School of Medicine Rochester, MI USA	Dr Kathleen Murphy Dr Ruth Lerman	Mindfulness in Medicine Year 2 medical students at Oakland University can partake in a modified MBSR course. The course is 7 weeks long, at 2 hours per class. It has been offered since 2012 The course consists of: didactics, two or three meditations per class, group discussions, daily homework, 5-minute breathing space, and 10-minute body scan/record of informal practice. Grades are based on punctuality, attendance, participation, narrative quality of homework and a reflection paper	

Table 1 (Continued)

Where	Instructors	Course description	Website
University of Rochester School of Medicine and Dentistry Department of Psychiatry Rochester, NY USA	Dr Mick Krasner Dr Ron Epstein	At the University of Rochester, there are two separate offerings: (i) an MBSR course (an 8-week elective taken by about 15–20% of the Year 1 medical school class), and (ii) the Mindful Practice curriculum. This consists of five required 90-minute sessions for the entire Year 3 class. The first 90-minute session, held a week before Year 3 starts, is a whole-class exercise focused on noticing and awareness. Subsequent classes focus on Professionalism, How Doctors Think, Burnout and Self-Care, and Witnessing Suffering. Each 90-minute class includes some contemplative practice, some informal practices (things that can be done during the workday to enhance awareness), and a narrative or appreciative inquiry exercise focusing on the student's thoughts, feelings and emotions related to the theme of the class. The classes are embedded in the seminar series for each of four required clerkships during Year 3	http://jama.jamanetwork.com/article.aspx?articleid=184621
University of Toronto Medical School Toronto, ON Canada	Christopher Hurst, MEd Dr Susan Edwards Shayna Kulman-Lipsey, MSW Dr Steven Selchen	Mindfulness in Medical Training The Office of Resident Wellness in Postgraduate Medical Education at the University of Toronto offers a series of seven wellness-themed workshops that stress a mindful approach to medical practice for residents and fellows. A few of the key concepts that underpin the curriculum are drawn from the Rochester Mindfulness in Medicine programme. Individual workshops focus on enhancing resilience and performance, managing transitions, time management, examination preparation and performance, career development, mindfulness and resilience in the context of adverse events, and fatigue management Shayna Kulman-Lipsey, Manager of Counselling Services at the Office of Health Professions Student Affairs in UGME at Toronto offers an open, bi-weekly mindfulness group for medical students on site. The group has been running for 3 years and typically attracts students in Years 2 and 3 The M-BRITE Seminar (i) The M-BRITE (Mindfulness-Based Resiliency and <i>iatros</i> [Greek: physician, healer] Therapeutic Enhancement) seminar is an elective offered to psychiatry residents at the University of Toronto. The seminar series has three primary aims: (i) to provide an experiential introduction to mindfulness	http://www.pgme.utoronto.ca/wellness.htm

Table 1 (Continued)

Where	Instructors	Course description	Website
		<p>(ii) to enhance stress management and resiliency (iii) to deepen therapeutic skill: in particular, to help foster therapeutic presence and engagement; to improve therapeutic alliance; to increase the capacity to manage and make use of transference and countertransference, and to increase comfort, competence and enjoyment when working in a mental health context</p> <p>The seminar series is a brief, four-class optional workshop that combines formal mindfulness meditation and inquiry with a variety of exercises targeting the above aims. Interested residents are subsequently invited to participate in full 8-week clinical MBSR/MBCT-style groups.</p>	
MBSR, mindfulness-based stress reduction; MBCT, mindfulness-based cognitive therapy			

students who took part in the Health Enhancement Programme demonstrated significant reductions in psychological distress (e.g. depression, hostility) and improvements in quality of life (mental health aspect) during a pre-examination period of assessment.

WHAT FORMATS ARE USED TO TEACH MINDFULNESS?

Programmes to teach mindful medical practice were initially based on the MBSR programme described by Kabat-Zinn¹⁹ (i.e. an 8-week course delivered in sessions of 2.5 hours each week, with a silent retreat day). However, recently other formats have been offered, as is evident in Table 1. Sometimes, lectures or workshops on mindfulness are interspersed throughout the 4-year curriculum. For example, at the University of Rochester, the entire Year 3 class is required to take five 90-minute classes that focus on: noticing and awareness; professionalism; how doctors think; burnout and self-care, and witnessing suffering. It seems that most of the work underway is not research-oriented and thus we do not know if the various changes made, such as shortening the programme, omitting the silent retreat day, or using briefer practice CDs, influence what students learn. Whereas Jain *et al.*¹¹ described a 1-month

programme, Rosenzweig *et al.*¹³ reported a 10-week programme; both had good outcomes. Warnecke *et al.*²⁰ randomly assigned senior medical students to either a take-home practice CD on mindfulness or a no-treatment control group and found that those who listened to the 30-minute CD at home reported significant reductions in stress and anxiety levels post-intervention and at the 8-week follow-up.

WHAT IS THE CONTENT OF MINDFULNESS PROGRAMMES?

Mindfulness programmes may include generic courses, such as those in MBSR, and tailored courses modified to include skills relevant to medical practice. The standard MBSR programme is offered on a weekly basis for 8 weeks and includes a silent retreat day between classes 6 and 7. Classes may be 2.0–3.5 hours in duration. Except for the first class, each opens with a meditation practice reflecting the aims and themes of that week. Classes include specific in-class and at-home exercises (e.g. worksheets) providing material for class discussions supporting the themes. Poetry and teaching stories are frequently used to facilitate students to connect emotionally and to help them to relate to the material in new ways beyond the thinking mind. Mindful movement (i.e. hatha yoga and walking meditation)

is taught as an extension of formal sitting and body scan meditation practices. The teacher aims to embody a mindful stance in the way he or she conducts inquiry into students' experiences. Whole- or small-group discussion supports this process. All is taught within a secular framework.

In various medical schools, tailored courses aim to address issues pertinent to students' needs. For example, an elective for Year 4 medical students is offered at McGill University Medical School; students indicated that they were apprehensive about residency and enrolled in the course with the aim of gaining resilience and reviving their original intentions for becoming doctors (e.g. being compassionate providers). Key elements included emphasis on self-care, healing and mindful communication. Interestingly, although the medical student elective was delivered in a modified format (i.e. twice per week over 1 month), outcomes were similar to those found in doctors and health care professionals in the longer course.²¹ The 58 students who took the course reported significant increases in self-compassion and mindfulness, and reductions in stress.²² The 15 residents who undertook the full 8-week format reported significant increases in self-compassion and mindfulness, and reductions in stress and emotional exhaustion.²²

DISCUSSION

Our review of programmes that teach mindful medical practice in medical school raises a number of important questions. Does mindfulness training work? What in mindfulness training works? Should mindfulness be taught as an elective or as part of the curriculum? What are the next steps in research in mindfulness training?

DOES MINDFULNESS TRAINING WORK?

Teaching mindful medical practice appears to work as evidenced primarily by changes reported by students before and after a particular course. This is suggestive evidence, but not the kind that would be accepted as proof of efficacy for a new medication, for instance. There are possibilities of regression to the mean in students who are sufficiently distressed to take the course, possible secular trends in well-being, and the placebo effect. These might be countered by arguing that as students appear to feel better after the course, it does not matter precisely how the changes come about.

WHAT IN MINDFULNESS TRAINING WORKS?

Assuming, as this review suggests, that students benefit from taking a course on mindful medical practice, what makes the difference? The following may impact students:

- the commitment it represents for taking steps to deal with stress in the student's life;
- the effects of group dynamics and the sharing of experiences with others in a similar situation;
- the didactic content of the course, including learning about how the mind works, how stress impacts one's life, means of coping with stressors, and the importance of self-care;
- the experiential aspects of the course, including exercises in communication, role-plays, retreats and mind-body connection;
- the effect of developing a meditation practice, and
- the impact of role-modelling by instructors.

Any and all of these may play a part; the surprising thing to us is that despite the various ways in which this material might be taught, the results are uniformly positive. The 'package' appears to work, although we should not jump to intuitive conclusions about what is most important. We have noticed in our students (MDS and other health care professionals) that changing the format in which the material is delivered (from once per week over 8 weeks to seven classes given twice per week as an elective module) does not alter results.

WHAT DOES MINDFULNESS TRAINING WORK FOR?

Outcomes identified thus far include reductions in perceived stress, anxiety and symptoms of depression, and increases in mindfulness, empathy and self-compassion, as measured soon after the course. We have yet to learn if these changes are maintained over time. Moreover, we do not know how these impacts generalise to other aspects of the students' lives and their work with peers, colleagues and patients.

SHOULD MINDFULNESS BE TAUGHT AS AN ELECTIVE OR AS PART OF THE CURRICULUM?

Given that mindfulness training has a generic type of effect that has more to do with being a human being than with learning a technique, the primary reason why it may matter when mindfulness training

is offered pertains to students' perceptions of their need for it and their concomitant motivation to attend and actively participate in the course. There are obstacles (competing demands) and opportunities (transitions, such as beginning clerkship) at every stage of medical training. This relates to an important issue, which concerns the difference between an elective and a mandatory course. Most of the ways in which mindfulness training is offered, described in Table 1, are selected by students; this implies that they are willing and able to engage in the learning process. Perhaps this motivation is essential if students are to benefit. Thus, the question of imposing mindfulness courses on students raises a further question.

WHAT ARE THE NEXT STEPS IN RESEARCH IN MINDFULNESS TRAINING?

We suggest that the next step in research might be to compare a mindful medical practice course (as a package) with an active comparison intervention using a randomised clinical trial, controlling for contact time and group dynamics. Assuming that benefits are shown for the former group, the next step might be to test an equivalent course in the context of a required course. This would inform us with regard to whether the course should become part of the core curriculum in medical school. Depending on the results of these studies, the next steps might involve an exploration to establish which components of the course are essential. Moreover, qualitative research could complement quantitative outcome research, which has dominated the field thus far (see Irving *et al.*¹⁵ for an example). Understanding from both the students' and teachers' points of view how mindfulness impacts their lives and work might lead to testable hypotheses. That said, we have some concerns about suggesting this research agenda, which, if it were to be carried out in an unimaginative or overly rigid manner, might stymie a movement based on the eminently sensible idea that the doctor's (or other type of health care professional's) quality of being makes a difference to the practitioner's own experience of stress and to his or her ability to relate to patients.

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