ARTICLE

Cultivating person-centered medicine in future physicians

Kevin Garneau MD[a], Thomas Hutchinson MB MSc[b], Qinyi Zhao BSc[c] and Patricia L. Dobkin PhD[d]

a Resident, Family Medicine, University of British Columbia, Terrace, British Columbia, Canada
b Professor & Director of McGill Programs in Whole Person Care, McGill University and Palliative Care Physician, Department of Medicine, Montreal University Health Centre, Montreal, Quebec, Canada
c McGill University, Montreal, Quebec, Canada
d Associate Professor of Medicine and Clinical Psychologist, McGill Programs in Whole Person Care, McGill University, Montreal, Quebec Canada

Abstract

Person-centered medicine, while valued implicitly, is not always taught explicitly in medical schools or during residency programs. Threats to educating and practicing person-centered medicine include perceived lack of time, stress, burnout and a paucity of mentors with a systematic approach to modeling and teaching students how to relate to patients in a way that addresses them as whole persons. Herein we review how trainee stress and burnout negatively impact patient care and outline a program designed to teach mindful medical practice that may be an antidote to these problems. Moreover, we present quantitative data and a student's narrative to highlight how to cultivate person-centered medicine in trainees.

Fifty-eight 4th year medical students completed questionnaires pertaining to: depression, burnout, stress, wellbeing, self-compassion and mindfulness before and after taking a 4-week elective entitled, Mindful Medical Practice. Statistically significant improvements were found on emotional exhaustion, depression, self-compassion and mindfulness. One student's experiences highlighted how what he learned in the elective guided him during his family medicine residency.

We conclude with a discussion of how the culture of medicine and the training of future physicians in particular, need to take the whole persons of both the physician and patient into account in order for all to be satisfied with and benefit from medical care.

Keywords

Burnout, mindful medical practice, medical students, person-centered medicine, residents, whole person care

Correspondence address

Dr. Patricia Dobkin, McGill Programs in Whole Person Care, Department of Medicine, McGill University, Gerald Brofman Centre, 546 Pine Avenue West, Montreal, Quebec, Canada, H2W 1S6. E-mail: patricia.dobkin@mcgill.ca

Accepted for publication: 11 February 2013

Introduction

Person-centered medicine, while valued implicitly, is not widely taught explicitly in medical schools or during residency programs. Threats to educating and practicing person-centered medicine include perceived lack of time, stress, burnout and few mentors with a systematic approach to modeling and teaching students how to relate to patients in a way that addresses them as whole persons. For example, MacLeod [1] studied how the cases used in problem-based learning can sabotage patient-centered medical education. She employed qualitative methods to analyze data from 67 problem-based cases, interviewed students and medical educators and found 6 specific ways that cases can undermine the trainee's ability to recognise the patient as a person. While MacLeod's work raises concerns, others have investigated methods to enhance focus on patients. For example, Ratanawongsa *et al.*'s study [2] with internal medicine residents and their patients found that patients treated by residents who had been assigned lighter patient loads and given seminars that included reflective exercises and taught patient-centered skills, reported being more satisfied with their medical care.

Maslach, Jackson and Leiter's work [3] led to the development of a model of burnout specific to the helping professions which included 3 subscales: (a) emotional exhaustion, (b) depersonalization (a numbing or lack of empathy or connection with clients and or students) and (c) reduced sense of personal accomplishment. The impact of stress and burnout upon healthcare professionals' physical health has been documented in numerous studies (e.g., Spikard, Gabbe & Christensen) [4]. Moreover, stress has been shown to significantly dampen attention and concentration and detract from decision-making skills [5,6]. Depression, distinct from but related to burnout, is accepted as "a common occurrence in medical training" [7]. Burnout has been associated with decreased patient satisfaction as well as "suboptimal self-reported patient

care" [8]. Even moderate levels of perceived stress have been found to diminish healthcare professionals' abilities to communicate effectively, convey empathy and forge relationships with patients [9,10].

Burnout has been linked to specific coping styles and attitudes towards the self. For example, Shanafelt, Bradley, Wipf and Back found that residents with the highest levels of burnout were more likely to report a perception that their personal needs were "inconsequential" [8]. Christensen, Levinson and Dunn [11] found that physicians tended to experience high levels of distress when they made mistakes and consequently were less willing to disclose mistakes to colleagues. Competitiveness and perfectionism fostered in medical training were cited as exacerbating distress surrounding clinical errors. Miller and McGowan [7] credit the "culture" of clinical training as engendering self-critical and excessively self-sacrificing attitudes and practices in physicians:

> "The culture of medicine is one in which perfectionism and "workaholic standards" rule the day. Many practice settings reward long hours and self-neglect. Physicians are encouraged to disregard themselves and deny their own needs. The process of medical education may enhance development of defense mechanisms that make it difficult to ask for help… Physicians become masters at delayed gratification. Many medical students and residents spend years coping with the high level of demand required in medicine, often harboring the expectation that later they will be rewarded with a happy, more balanced life. However, the task-oriented coping skills developed during training do not go away automatically after training… the goal-oriented approach leads to neglecting alternative sources of gratification or self-esteem; thus, after training, physicians may not have a way to find meaningful balance between work and other life activities."

Taub *et al*. [12] call for the establishment of ethical guidelines surrounding health and wellness in physicians and propose that the medical profession as a whole has the responsibility to establish physician health programs. In a mixed-methods study, Weiner, Swain, Wolf and Gottlieb [13] found that physicians who engaged in wellness-promotion practices were more likely to have higher scores of global wellbeing. Wellness promotion activities and strategies were grouped into 5 categories including: (a) relationships, or the ability to draw upon family, friends and colleagues to deal with stress; (b) religion or spirituality; (c) self-care practices such as reading, eating well, attending counseling, exercising and meditation; (d) strategies at work such as setting limits on hours and choosing work-related activities that are meaningful and satisfying and (e) adopting a "balanced approached to life" that were consistent with a commitment to maintaining interests and activities outside of work.

Preventive efforts have focused upon trainees, particularly at the outset of training periods [14,15]. Kabat-Zinn and colleagues have been teaching a stress management program (called Mindfulness-based Stress Reduction; MBSR) to medical students at the University of Massachusetts Medical School for over 2 decades. They aim to help students cope with stress and stay well throughout their arduous training. Early and more recent cohort studies and randomized trials of medical and pre-medical students who participated in an MBSR program demonstrated positive effects on anxiety and depression, as well as ratings of empathy and spirituality [16-18]. Similarly Hassed *et al*. [19] initiated a program for all medical students at Monash Medical School in Australia which included teaching mindfulness; results showed significant increases in wellbeing (assessed with a quality of life measure) and reductions in distress. Using a 4-week version of MBSR, Jain *et al*. [20] conducted a 3-arm randomized clinical trial with a mixed-group of students in medicine and nursing training programs. They were compared to a wait-list control group and a group that received relaxation training. Participants in the mindfulness and relaxation groups were equivalent in terms of decreases in distress. However, effect sizes for increases in positive affect were larger for the MBSR group.

While these encouraging outcomes for students' wellbeing are notable, a pertinent question is whether these improvements influence the physician-patient relationship and subsequent patient outcomes. In an early review, Stewart [21] highlighted the connection between effective physician-patient communication and patient health outcomes (i.e., emotional health, symptom resolution). He argued that in order for optimal communication to occur, physicians must be "mindful" of themselves, the patient and the context. Correspondingly, Connelly [22] illustrated with case studies how being present and aware during a medical encounter improved patient care. The fact that resident burnout was associated with decreased patient satisfaction as well as "suboptimal self-reported patient care" [8] makes the point, albeit in a negative way. Positive evidence is found in Krasner *et al*. [23] who taught a modified version of MBSR to 70 primary physicians and found participation in the program was associated with short-term and sustained (1 year) wellbeing and attitudes consistent with professionalism. Mindfulness was positively related to empathy towards patients, conscientiousness and emotional stability (i.e., resilience). Hoffman *et al*. [24] found that residents who took the MBSR course stated that it helped to reduce stress and increased the qualities of openness and empathy in their listening; moreover, they tended to probe more deeply into patients' problems. Thus, this approach is consistent with person-centered medicine. Two recent qualitative studies [25,26] found similar results: physicians and healthcare professionals who took the Mindful Medical Practice courses felt less isolated, were able to relate better to patients when mindful; yet, they still struggled to some extent with providing space for themselves in their busy lives to engage in self-care activities.

Mindfulness-Based Medical Practice (2009-2012)

The McGill University 8-week Mindfulness-Based Medical Practice (MBMP) program is closely modeled after the MBSR program developed by Kabat-Zinn [27]. It has been modified to include role plays and other exercises

emphasizing communication skills in order to help clinicians integrate mindfulness into relationships with patients as well as colleagues similar to those described in Krasner *et al* [23]. The program is taught by the 2 instructors, a PhD level psychologist (PLD) and a palliative care physician (TH), both with training at the University of Massachusetts Centre for Mindfulness (PLD also trained at the University of Rochester School of Medicine and Dentistry, where Mindful Practice is taught; see Epstein [28]).

At McGill University Medical School, all 4th-year medical students must choose an elective in their last semester of medical school; Mindful Medical Practice is one of 14 electives that cover a variety of topics pertinent to the practice of medicine (e.g., Spirituality and Ethics in Medicine: *A New Approach to Compassionate Care*; The Poetry of Practice-*Creative Writing and the Reflective Doctor;* Indigenous Health in Canada; Complementary and Alternative Medicine in Clinical Practice, *etc*.). Students are required to attend all classes and receive a pass/fail grade.

The program was modified specifically for medical students in 2009 by condensing it into a month long elective in their final semester of medical school. Rather than meeting once a week, students attend the group twice a week (2.5 hours/class) for 4 weeks and have a silent retreat day (6 hours) the Sunday before the course ends. Also, reading materials relevant to mindful medical practice are assigned to highlight the relevance of the course to students' future work as physicians. Students received a home practice manual and 3 CDs created by one of the instructors (PLD) of the following meditation practices: body-scan, sitting meditation, yoga, and meditation involving imagery. Students are asked to complete specific home practice exercises (e.g., yoga, recording unpleasant events) including informal practice (e.g., awareness of breath; being mindful while engaging in daily tasks) in between classes. Group discussions throughout the course focus on the various practices and how they are being integrated into the students' daily lives and work.

Herein, we present data for 58 4th-year medical students who took the course between 2009-2012 and use the voice of one student to showcase how it impacted his personal growth and medical practice during his family medicine residency. The work was based on the premise that well physicians who are self-aware can promote healing in their patients [29]. Table 1 outlines the course components with the student's corresponding experiences.

Program Evaluation

We combined quantitative and narrative methods to explore how the Mindful Medical Practice program may impact trainees' wellbeing and their ability to provide person-centered medicine.

Procedures

Fifty-eight 4th-year medical students completed on-line questionnaires pertaining to depression, burnout, stress, wellbeing, self-compassion and mindfulness one week before and one week after the course. They signed a consent form with regard to data collection with the understanding that data would remain confidential. The McGill University Faculty of Medicine Institutional Review Board provided ethical approval for the study. A 24-year old Caucasian, bilingual male medical student (with French as his mother tongue) provided us with a qualitative perspective of his experience with the course. He stated that his goals for taking the course were "to learn tools to deal with stressful events and to gain better awareness of my own uncomfortable feelings."

Measures

Maslach Burnout Inventory-Human Services Survey (MBI-HSS)

The MBI is a 22-item self-report questionnaire with 3 distinct facet scales designed to measure 3 components of burnout: emotional exhaustion, cynicism or depersonalization from patients and sense of lowered professional efficacy or personal accomplishment [3]. Items included in the emotional exhaustion facet are: "I feel used up at the end of the day", "I feel fatigued when I get up in the morning and have to face another day on the job". Items for the depersonalization facet include: "I've become more callous towards people since I took this job" and "I don't really care what happens to some recipients." Items in the professional competence facet include: "I have accomplished many worthwhile things in this job" (reverse coding) and "I feel I'm positively influencing other people's lives through my work" (reverse coding). The MBI uses a 7-point Likert scale, with 0 being never and 6 being every day. The inventory is the most widely researched and employed measure of workplace burnout and has been used in numerous studies of healthcare professionals [3].

Perceived Stress Scale-10 (PSS-10)

This 10-item questionnaire is designed to measure an individual's sense that life events are overwhelming and not in their control [30]. The scale has been demonstrated to consist of 2 factors; perceived distress "In the last month, how often have you found that you could not cope with all the things that you had to do?" and perceived coping "In the last month, how often have you dealt successfully with irritating life hassles?" Scores range from 0 to 40; higher scores indicate that the respondent is feeling that life is not manageable.

Scales of Psychological Well-Being (SPWB)

The 54-item version of the Scales of Psychological Well-Being is one of the most widely used and researched

Table 1 MBSR components and the student experiences

Class 1: Being present to yourself	
Introduction to meditation	Meditation is not as easy as it seems to be. It allows me to be in a state of quiescent rest. Fleeting thoughts are coming and going in my mind and I become observant and "mindful" of their existence. I feel somewhat liberated from the turmoil and stresses of daily life.
Self-care exercise	I am encouraged to engage in more self-care practices, to take breaks during the day and to simply do things for enjoyment.
Class 2: Perception	
Body scan meditation	This meditation in a supine position permits better awareness of various sensations in my body. I observe and feel the rising and the falling of my breath and explore various sensations as I focus on different parts of my body.
Perceiving and stress	Each individual responds to stressors differently and this is related in part to perceptions. Stress can present itself insidiously and we explore and discuss ways to recognize it (sweaty palms, trouble thinking clearly, isolation) and deal with it effectively.
Physician wellbeing	I realize that I tend to suppress my emotions and withdraw when I face disappointment and sorrow. I learned that openness and acceptance of my feelings is the first step towards finding ways to cope better.
Informal mindfulness	I realize that I can practice "mindfulness" anytime of the day: while eating a snack, at the traffic lights, while brushing my teeth. I now pay attention to otherwise trivial moments of my life that I used to fail to notice.
Class 3: Being well with what is	
Pleasant events	This exercise cultivates the idea of "awareness" by focusing attention on pleasant moments of my life. I explore different aspects of positive experiences (physical responses, thoughts and feelings).
Yoga	The restorative yoga practiced in this course brings awareness to the different parts of my body that are tense and allows for a greater relaxation.
STOP	This mnemonic (Stop; Take a breath; Observe; Proceed) reminds me to return to the present moment when I feel overwhelmed and tense. It breaks being on "automatic pilot" and helps me focus on what it happening and needs to be done now.
Triangle of Awareness	This triangle helps me conceptualize what mindfulness is: an awareness of thoughts, emotions and sensations in the context of the present moment.
Class 4: Stress	
Stress and illness	We learn how stress is directly and indirectly related to illness in ourselves and our patients.
Unpleasant events	This exercise brings me in contact with myself at a deeper level. I am inclined to ignore and overlook unpleasant events in my life. Through a conscious effort to recognize, understand and accept these disagreeable moments, I have the opportunity to make significant changes in my life.
Sitting meditation	The stillness of meditation is overwhelming at times. It is a good practice to train the mind to sustain attention. Through attempts at focusing my attention on my respiration, I acknowledge and accept this wandering mind of mine.
Class 5: Mindful Communication	
Satir's communication stances	Virginia Satir's communication stances clarify my feelings, e.g., perceptions of low self-confidence in the context of the healthcare system. I realize that I was often in the "placating stance", basically renouncing myself, in an attempt to please my supervisors and the patients.
Role plays	The group explores unresolved scenarios previously experienced during clerkship and we revisit them using mindful communication. We watch those unconstructive communication habits and discover ways to change them.
Walking meditation	Walking in mindfulness brings me a sense of inner peace. I am aware of the shifting of the body from one side to the other, along with the flowing of the breath. There is no rush, no intention, nowhere to go.
Class 6: Retreat	
Practice in silence (all forms of meditation learned)	We are plunged into a day of silence, cumulating the learning from the previous classes. It initially feels like a daunting experience to spend one day without speaking. But I realize that silence can bring so much: deeper connection to our thoughts and feelings. I share privileged and memorable moments with my fellow students.
Class 7: Healing/being whole	
Debrief retreat	We discuss the personal rewards silence may bring into our lives. The silent retreat day is transformative for many of us, but it is particularly arduous and unpleasant for others. The possibility of increased rather than decreased suffering is addressed.
Loving kindness meditation	This meditation helps broaden my outlook on life, allowing me to be more open-hearted, compassionate and accepting.
Mindfulness and healing	We discuss a more holistic approach to medicine using mindfulness-based techniques. Being fully present to patients, acknowledging and accepting their illness enable us to be more compassionate. It positively affects the therapeutic relationship. Healing in medicine complements curing and we examine the importance of both.
Class 8: Ending and integrating	
Making the practice your own	The practice of mindfulness is a personal commitment, not an obligation. The tools may be used lifelong. Our instructors hope that we will remember to use those tools regularly or during times of difficulty. We talk about how to maintain and apply what we learned in the course during residency and beyond.
Adherence	Mindfulness can be carried out in multiple ways; we were taught various informal and formal practices and reviewed these. It can be applied in whatever form suits me and it can easily be integrated into my everyday life. We develop different means of daily practice and this is shared among us.

measures of the construct of wellness. Ryff [31] conceptualized wellbeing as a 6-faceted construct including self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth. Items for each corresponding subscale include: "Being happy with myself is more important to me than having others approve of me", "I often feel overwhelmed by my responsibilities" (reverse coding), "I have the sense that I have developed a lot as a person over time", "I know that I can trust my friends and they know they can trust me", "My daily activities often seem trivial and unimportant to me" (reverse coding) and "In general, I feel confident and positive about myself".

Self-Compassion Scale (SCS)

This measure was selected to explore changes in self-compassion and non-judgement [32]. This scale measures: (a) the extension of kindness and understanding to the self; (b) the view that one's experience of suffering is not isolated but part of a larger human experience and (c) the ability to hold painful feelings and thoughts without over-identifying with them. The SCS is a 5-point Likert scale with 1 indicating *almost never* and 5 indicating *almost always*. The scale has 6 factors: *Self-Kindness*: "I'm kind to myself when I'm experiencing emotional suffering", *Self-Judgement*: "When times are really tough, I tend to be tough on myself", *Common Humanity*: "When things go badly for me, I see the difficulties as part of life that everyone goes through", *Isolation*: "When I fail at something that's important to me I tend to feel alone in my failure", *Mindfulness*: "When something painful happens I try to take a balanced view of the situation" and *Over-identification*: "When I'm down I tend to obsess and fixate on everything that's wrong". Individuals high on *Self-Compassion* were shown to have better mental health outcomes and scores on the SCS were negatively correlated with those on the Beck Depression Inventory, [33] (r = -0.51) and the Spielberger Trait Anxiety Inventory [34] (r = -0.65).

Mindful Attention Awareness Scale (MAAS)

The MAAS is a 15-item single factor scale developed to reflect a present-centered attention to and awareness of all accessible events and experiences (i.e., internal and external events) [35]. An individual who scores high on this measure would be more likely to incorporate the practice of mindfulness into their daily lives than an individual who scores low on this measure. Examples of items include: "I find myself doing things without paying attention" and "I find myself preoccupied with the future or the past". It uses a 6-point Likert scale with 1 indicating *almost always* and 6 indicating *almost never*. The MAAS has also been found to be sensitive to individual differences and higher scores were found in individuals who practiced meditation regularly [35].

Beck Depression Inventory II (BDI-II)

The 2nd edition of the BDI is a 21-item self-report measure of depression which reflects the DSM manual for mental disorders (4th Edn.) [33]. Its development, modifications from the BDI and psychometric properties are described in the BDI–II manual [33]. Item responses range from 0 to 3; a total score is calculated by summing across items. A score of 14-19 indicates mild, 20-28 moderate and 29-63 severe depression.

Follow-up Questionnaire

Students rated the course on a scale of 0 to 10 in terms of its value for them, with 10 very important and they indicated to what extent they viewed various aspects of the course as useful and beneficial (on a 1 to 10 scale, with 1 = not useful at all): for example, awareness of breath (informal practice), yoga, large group discussions, body scan, meditations with CDs, home practice manual and exercises.

Data Analyses

Descriptive statistics for all study variables were calculated. Pearson correlations were calculated between changes in mindfulness and changes in post-program measures: depression (BECK-II), burnout (MBI), perceived stress (PSS), self-compassion (SCS) and wellness (SPWB). Paired-sample t-tests were conducted to examine changes from pre- to post-course on all measures. To assess the relative magnitude of the treatment effect for each outcome and process variable, effect sizes (Cohen's *d*, [36] (ES)) were calculated. A Bonferonni correction for multiple testing was computed (0.05/8=0.006) for the pre-post course t-tests.

Results

Group Findings

Fifty-eight students completed on-line assessments. The average age was 26-years; 74% were women; 50% were Caucasian, the other half were Asian, Middle-Eastern or other, reflecting the multicultural population of Montreal, Canada (n=43 for sociodemographic information).

Pre- to post-course measures are provided in Table 2. Depression declined significantly ($t = 4.07$; $p < 0.001$) for the 43 students who completed this questionnaire (Note: in the first year a different screening instrument was used for depression and it is for this reason that for this measure the sample size is smaller). Of the scores on the MBI subscales emotional exhaustion ($t = 3.39$; $p < 0.001$) declined significantly. Significant increases on mindfulness ($t = -3.15$; $p < 0.003$), and total self-compassion ($t = -4.45$; $p < 0.000$) were also observed, as were most subscale scores of

Table 2 Pre-post results for Medical Students results, 2009-2012

Variable	Pre-Program Mean (SD)	Post-Program Mean (SD)	Difference	d value	t value	p value
BECK Depression[a]	9.93 (6.30)	6.51 (6.38)	3.42	0.58	4.07	0.001
MBI Emotional exhaustion[b]	23.81 (8.79)	20.38 (9.27)	3.43	0.38	3.39	0.001
MBI Personal accomplishment[b]	37.98 (5.59)	37.72 (7.36)	0.26	0.04	0.32	0.747
MBI Depersonalization[b]	8.45 (6.28)	8.26 (5.43)	0.19	0.03	0.30	0.766
PSS[b]	17.41 (6.85)	15.26 (5.79)	2.16	0.34	2.29	0.026
MAAS[b]	3.62 (0.73)	3.94 (0.73)	-0.32	0.44	-3.15	0.003
SCS Total[b]	2.74 (0.82)	3.15 (0.73)	-0.41	0.53	-4.45	0.0001
RYFF Total[b]	250.53 (28.54)	253.22 (29.55)	-2.69	0.09	-0.83	0.407

Bonferonni correction = α / *n*; = 0.05 / 8; = 0.006; [a] n = 43; [b] n = 58

self-compassion: self-kindness (t = -5.42; $p < 0.000$), self-judgment (t = -3.27; $p < 0.002$), common humanity (t = -4.03; $p < 0.000$), mindfulness (t = -3.16; $p < 0.002$) and over-identification (t = -3.44; $p < 0.001$). Effect sizes (Cohen's *d*) were in the moderate to large range for all measures ($d = 0.38 - 0.58$).

Increases in mindfulness were significantly correlated with: decreases in stress ($r = -0.41$, $p < 0.001$), increases in self-compassion ($r = 0.56$, $p < 0.000$) with trends for burnout and wellness ($p = 0.08$ and 0.06, respectively).

On the follow-up questionnaire, students rated the course, on average 7.86 (SD =1.78) in terms of how important it was for them. With regard to course components, they ranked ordered them as follows in terms of usefulness: awareness of breath, yoga with CD, large group discussions, home practice manual and exercises, body scan with CD, small group exchanges, silent retreat, sitting meditation with CD, sitting meditation without CD and body scan without CD.

The Student's Perspective (KG)

We document here the student's perspective *verbatim* and at length.

> "From our first day in medical school we are encouraged to develop the qualities of a proficient physician that is, empathy, listening and communication skills, integrity and clinical competencies. Efforts are made beginning in the first year of medical school to impart these personal characteristics. The McGill University Faculty of Medicine offers various means of cultivating these characteristics: a 4-year Physicianship curriculum which underscores the importance of relationships with our patients and ourselves; an annual "wellness week" in which students are invited to attend workshops to help them cope with work-related stress and a mentorship program, where a small group of medical students and a physician meet every 4 months to discuss personal and professional issues.
>
> The rigors of medical education are well documented. Less is said about clerkship and residency when we are suddenly exposed to the harsh reality of the healthcare system: long work hours, sleep deprivation and human suffering. We are launched into a world where hours are not counted and stress is an integral part of the day. We are constantly being evaluated. We must perform, study, prove ourselves to our peers, house staff and above all to ourselves that we are indeed competent. We are required to rapidly assimilate large volumes of information. Clearly the academic demands are such that we must adopt a new lifestyle and we are changed by the process.
>
> The challenge lies in being able to tap into inner resources to confront the strains encountered without losing one's sense of self. Distress in healthcare professionals (depression, anxiety, burnout) is flagrant. I will never forget the day when the junior resident in general surgery failed to arrive to work for 2 consecutive days. He was found dead in his apartment, empty syringes of morphine at his side. The "ward culture" [37] is very different from what we imagined. The notion of "fostering empathy" is hardly evident in the day-to-day hospital experience. My supervisor wrote this comment during my first clerkship rotation, "*Caring and competent, but needs to work on separating his emotional involvement with patient predicaments from necessary objective decision-making*." We were asked to be more *objective* and to dissociate our feelings from the physician-patient relationship in order to respond efficiently with evidence-based information to the patient's needs. Yet, we wonder, what is the place of subjectivity in patient care? Perhaps the answer is not by "*separating [our] emotional involvement*" if we want to deliver comprehensive patient care. The physician-patient relationship – whether deep or insincere, nurtured or ignored – has some form of mutuality inherent in it. The Mindful Medical Practice course allows us to take a deeper look into interpersonal patterns that are intrinsic to the profession and to find ways to cope with the difficulties of becoming a physician.
>
> In my view, training future physicians should involve helping them develop positive coping mechanisms, good mental health, an empathic approach to people, while encouraging personal growth and emotional intelligence. How does one do this? What could help a

trainee to increase awareness of his or her own health and wellbeing throughout his or her career? These questions led me to enroll in the Mindful Medical Practice elective. Knowing about "suboptimum attention to self-wellness by physicians" [38] made me wonder if I could acquire tools to prepare me for residency and beyond.

The Mindful Medical Practice course gave me one month to pause and reflect on my experience as a medical student. We were provided with protected time to disengage from clinical activity and academic work that allowed us to devote ourselves fully to who we are, how we work and learn means of taking care of one self. During our bi-weekly classes I adopted a new way of living. Formal practices such as the body scan and yoga were taught along with sitting and walking meditations. While I had already practiced yoga, the approach taken in this context gave me insight into how it contributed to inner balance. Informal practices such as being mindful during ordinary activities and incorporating breath awareness in the moment were also part of the process.

Using formal and informal practices we directed our minds towards a state of consciousness including awareness of our emotions, reactions, temperaments and our interpersonal encounters. Often during formal practice I would have a dialogue with myself saying, "Oh no, here I go. My mind is wandering again. Go back to your breathing. Breath 1, 2, 3." This ability to recognize one's state of mind is the first step towards a deeper appreciation and understanding of the present moment. This greater awareness (of the self and others) was accompanied by the emergence of personal discomforts, doubts, sadness, empathy, frustration and happiness. We were encouraged to express our emotions and experiences in class; something as simple as "my back hurt when I was doing the sitting meditation so I could not concentrate" to more revealing observations such as, "I felt mediocre and inferior when the healthcare professional said that to me." One means of deconstructing certain experiences that were deemed difficult at work was to approach them with a non-judgmental, curious attitude. We were able to share with our fellow students in an open, safe setting what we felt and perceived. We were encouraged to trust and listen to our bodies rather than tune them out (for example, when tired - continue working, when sick - go to work anyway).

Communication skills are central to medical practice and thus integral to medical education. During the pre-clerkship years we used the classic approach of data gathering to obtain a complete history of the patient's presenting complaint, including the psychological repercussions of illness. But as we enter our clerkship years, it becomes evident that communication skills go beyond this ability to gather and share information with patients and co-workers. Good communication skills include being able to understand the patient's perspective, emotions and expectations as well recognize and respond to his or her stated problems. These skills require self-awareness and certain habits of mind that allow one to be more attentive and sensitive to patients' needs. The course helped me reflect on my behavioural patterns and thinking processes. By enhancing my ability to examine the way I communicate with patients, I was able to recognize and correct certain errors I was making. For example, when I interviewed patients, I was quick, asking one question after another. Now I tend to use observant silence inviting the patient to say more. I also had the inclination to read the patient's chart and listen to the patient simultaneously. Presently, I take my time during the interview, establish eye contact and thoughtfully delay reading the records until I indicate to the patient my intention to do so.

The course is tailored to permit each student to develop his own way of coping with every day stressors. Various domains of our lives were touched: physical, spiritual, emotional and social. The course enabled me to be more aware of myself, my colleagues, my patients and my limitations. It promoted a "culture of care" and provided a model for medical education. Now that I am completing family medicine residency, I realize that mindful medical practice may appear "countercultural" to those who do not know what it entails. Throughout residency training we are told that efficient doctors multitask, act quickly, work hard under stress and make good clinical decisions despite being exhausted. My preceptor wants me to be "*efficient*" and "*to the point*" in my clinical duties and comments that my "*time management skills could improve*". I need to conduct medical interviews and physical examinations in a timely manner (15 minutes or less) and to find a way within that time frame to do all the tasks related to patient's care: charting, telephone messages, referral letters, administrative duties. It seems that nothing is handled in a mindful way at the clinic. Everything is designed to increase patient volume and to be time-efficient. However, I remind myself what was taught in the course: stop, be self-reflective and breathe. Residents can easily respond to the strain of overwork by working even more. There always seems to be a last laboratory result to double-check, a patient to speak to or a recent medical journal article to read. Work seems interminable. Now, whenever I feel overwhelmed I make a conscious effort to listen to what my body is telling me. I learned to work within my limitations and to take a step back when needed. I am more attentive, self-aware, curious and care more about my patients and myself as a result.

I often work without direct supervision and I must deal with ambiguous clinical scenarios. I have noticed that living with uncertainty (e.g., I don't know what is causing a patient's abdominal pain) triggers anxiety and doubts in me. I am aware that these inner experiences may influence my clinical judgment. Fortunately the course helped me to STOP; that is: S-stop; T-take a breath; O-observe; P-proceed to the best of my ability even when, or especially when, I am unsure or anxious. An inner voice has emerged that allows me to accept the day-to-day chaos so that I can remain calm. Finally, I have included myself on my list of who to take care of and I do so by practicing meditation and yoga as often as possible. My experience is echoed in a paper written by Wong [39]. Perhaps now is the time to integrate this type of course into mainstream medical education. Some medical schools are doing so already (e.g., Drolet and Rodgers [40], at Vanderbilt School of Medicine). One recent randomized clinical trial of mindfulness training [41] showed a significant reduction in medical student stress and anxiety following the intervention."

Discussion

As a group, the students showed improvements following the course on depression, emotional exhaustion and self-compassion. Increases in mindfulness were significantly correlated with some of these changes, similar to Krasner and colleagues' results with primary care physicians [23]. The student's (KG) reflections provide a deeper, qualitative understanding of how he benefited from the course personally and the ways in which it subsequently helped him during his residency in family medicine. While he may not represent all of the students who took the course, his observations complement the quantitative data by pointing to the processes that may underlie the outcomes.

Irving *et al*. [25] published a qualitative paper from the Mindfulness-Based Medical Practice course; in a subgroup analyses for the physician group (53.3% of the sample) [42] significant decreases in emotional exhaustion, perceived stress, depressive symptoms and increases in mindfulness, wellbeing and self-compassion were found. To complement the quantitative data, participants were offered the opportunity to engage in focus groups to explore perspectives relative to challenges, barriers to practice and how meaningful change may have resulted from taking part in the program. A Grounded Theory qualitative data analysis indicated that they experienced enhanced communication in clinical encounters with patients and colleagues, as well as shifts in their attitudes towards self-care. Thus, the data suggest for both the students and seasoned clinicians that participating in a course on Mindful Medical Practice may contribute to person-centered care by decreasing aspects of burnout, depressive symptoms and stress, while increasing self-compassion and mindfulness.

We believe that this student's experience raises important questions about the clinical culture in which students are educated [43] and what we might do to modify some of the resultant deleterious effects. As mentioned above, there is a growing body of evidence that mindfulness relieves stress in a variety of contexts [44] and the clinical care of sick patients in a busy and often overburdened medical system appears an important context in which to introduce and evaluate tactics that may relieve stress [45]. There is a specific aspect of our teaching of mindfulness that is particularly important in a medical context – the emphasis that we place on congruent [46] clinical relationships [47]. This is a unique feature of our Mindful Medical Practice course that we teach experientially through role plays [47] which include not only student-patient relationships, but other relevant relationships to peers, colleagues and supervisors. We hope in this way to employ mindfulness in the service of relationship-centered care [48]. We may not be able to change the system from the outside, but we are encouraged by the experience of this student (and related data from other students, residents, physicians and healthcare professionals whom we have taught) [49] that it is worth continuing to explore mindful congruence as a way of changing the healthcare system from the inside.

As in all studies, there were limitations herein. Student characteristics may limit the generalizability of the results as they were only a small percentage of medical students in one institution in Canada. The study lacked a control group leaving open the possibility that effects observed were due to regression towards the mean, spontaneous changes or non-specific effects such as expectations. Moreover, the students were interviewed and matched to a residency program around the same time as the course evaluations were completed. Nonetheless, their results mirrored those of the healthcare professionals in other courses where this was not the case. Given our lack of data measuring adherence to assess how closely students followed home practice assignments (i.e., engaged in formal and informal practice outside of the class time), we cannot know if this was helpful or not. At this juncture, it remains unclear whether the changes seen may be attributed to mindfulness practice itself, the group experience, or both. While reports have been mixed, Imel, Baldwin, Bonus and Maccoon [50] found that group effects accounted for 7% of the variability in symptom reduction. The power of the group structure may have implications for the provision of follow-up groups, such as the one offered to physicians at the University of Rochester, School of Medicine and Dentistry, yielding promising results [23]. Future research might also examine the effects of mindfulness training upon interactions in the clinical context.

Acknowledgments, funding, conflicts of interest and ethics

The authors thank Ms. Angelica Todireanu, our administrator at McGill Programs in Whole Person Care, who organizes our various programs and additionally all of the medical students who agreed to participate in the research aspect of this work. The research received no formal funding. The authors declare no conflict of interest. Ethical approval was provided by the IRB in the Faculty of Medicine at McGill Medical School, Canada.

References

[1] MacLeod, A. (2011). Six ways problem-based learning cases can sabotage patient-centered medical education. *Academic Medicine* 86 (7) 818-825.

[2] Ratanawongsa, N., Federowicz, M.A., Christmas, C., Hanyok, L.A., Record, J.D., Hellmann, D.B., Ziegelstein, R.C. & Rand, C.S. (2012). Effects of a focused patient-centered care curriculum on the experiences of internal medicine residents and their patients. *Journal of General Internal Medicine* 27 (4) 473-477.

[3] Maslach, C., Jackson, S.E., Leiter, M.P. (1996). Maslach Burnout Inventory manual. 3rd edn. Palo Alto, CA: Consulting Psychologists Press.

[4] Spickard, A. Jr., Gabbe, S.G. & Christensen, J.F. (2002). Mid-career burnout in generalist and specialist physicians. *Journal of the American Medical Association* 288 (12) 1447-1450.
[5] Skosnik, P.D., Chatterton, R.T. & Swisher, T. (2000). Modulation of attentional inhibition by norepinephrine and cortisol after psychological stress. *International Journal of Psychophysiology* 36, 59-68.
[6] Klein, G. (1996). The effect of acute stressors on decision making. In: Stress and human performance. (Driskell, J. & Salas, E., eds.), pp. 49-88. Hillsdale, NJ: Erlbaum.
[7] Miller, M.N. & McGowen, K.R. (2000). The painful truth: physicians are not invincible. *Southern Medical Journal* 93, 966-973.
[8] Shanafelt, T.D., Bradley, K.A., Wipf, J.E. & Back, A.L. (2002). Burnout and self-reported patient care in an internal medicine residency programme. *Annals of Internal Medicine* 136 (5) 358-367.
[9] Beddoe, A.E. & Murphy, S.O. (2004). Does mindfulness decrease stress and foster empathy among nursing students? *Journal of Nursing Education* 43 (7) 305-312.
[10] Enochs, W.K. & Etzbach, C.A. (2004). Impaired student counselors: Ethical and legal considerations for the family. *The Family Journal* 12 (4) 396-400.
[11] Christensen, J.F., Levinson, W. & Dunn, P.M. (1992). The heart of darkness: the impact of perceived mistakes on physicians. *Journal of General Internal Medicine* 7 (4) 424-431.
[12] Taub, S., Morin, K., Goldrich, M.S., Ray, P. & Benjamin, R. (2006). Physician health and wellness. *Occupational Medicine* 56 (2) 77-82.
[13] Weiner, E.L., Swain, G.R., Wolf, B. & Gottlieb, M. (2001). A qualitative study of physicians' own wellness-promotion practices. *Western Journal of Medicine* 174 (1) 19-23.
[14] Dobkin, P.L. & Hutchinson, T.A. (2010). Primary prevention for future doctors: promoting well-being in trainees. *Medical Education* 44 (3) 224-226.
[15] Shapiro, S.L. & Schwartz, G.E. (1998). Mindfulness in medical education: Fostering the health of physicians and medical practice. *Integrative Medicine* 21, 581-599.
[16] Astin, J.A. (1997). Stress reduction through mindfulness meditation. Effects on psychological symptomatology, sense of control, and spiritual experiences. *Psychotherapy and Psychosomatics* 66, 97-106.
[17] Rosenzweig, S., Reibel, D.K., Greeson, J.M., Brainard, G.C. & Hojat, M. (2003). Mindfulness-based stress reduction lowers psychological distress in medical students. *Teaching and Learning in Medicine* 15 (2) 88-92.
[18] Shapiro, S.L., Schwartz, G.E. & Bonner, G. (1998). Effects of mindfulness-based stress reduction on medical and premedical students. *Journal of Behavioral Medicine* 21 (6) 581-599.
[19] Hassed, C., de Lisle, S., Sullivan, G. & Pier, C. (2009). Enhancing the health of medical students: outcomes of an integrated mindfulness and lifestyle program. *Advances in Health Sciences Education: Theory and Practice* 14 (3) 387-398.
[20] Jain, S., Shapiro, S.L., Swanick, S., Roesch, S.C., Mills, P.J., Bell, I. & Schwartz, G.E. (2007). A randomized controlled trial of mindfulness meditation versus relaxation training: effects on distress, positive states of mind, rumination, and distraction. *Annals of Behavioral Medicine* 33 (1) 11-21.
[21] Stewart, M.A. (1995). Effective physician-patient communication and health outcomes: a review. *Canadian Medical Association Journal* 152 (9) 1423-1433.
[22] Connelly, J.E. (2005). Narrative possibilities: using mindfulness in clinical practice. *Perspectives in Biology and Medicine* 48 (1) 84-94.
[23] Krasner, M.S., Epstein, R.M., Beckman, H., Suchman, A.L., Chapman, B., Mooney, C.J. & Quill, T.E. (2009). Association of an educational program in mindful communication with burnout, empathy, and attitudes among primary care physicians. *Journal of the American Medical Association* 302 (12) 1284-1293.
[24] Hoffman, A., Goldberg, D., Bockian, N., Broadwell, S. & Palmieri, M.J. (1998). Training medical residents in mindfulness-based stress reduction: A quantitative and a qualitative evaluation. *Journal of Investigative Medicine* 46 (Supplement 7) A267.
[25] Irving, J., Park, J., Fitzpatrick, M., Dobkin, P.L., Chen, A. & Hutchinson, T. (2012). Experiences of Health Care Professionals Enrolled in Mindfulness-Based Medical Practice: A Grounded Theory Model. *Mindfulness.* DOI 10.1007/s12671-012-0147-9.
[26] Beckman, H.B., Wendland, M., Mooney, C., Krasner, M.S., Quill, T.E., Suchman, A.L. & Epstein, R.M. (2012). The impact of a program in mindful communication on primary care physicians. *Academic Medicine* 87 (6) 815-819.
[27] Kabat-Zinn, J. (1990). Full Catastrophe Living: Using the wisdom of your body and mind to face stress, pain, and illness. 1st edn. New York: Delacorte Press.
[28] Epstein, R.M. (1999). Mindful practice. *Journal of the American Medical Association* 282 (9) 833-839.
[29] Dobkin, P.L. (2009). Fostering healing through mindfulness in the context of medical practice. *Current Oncology Reports* 16 (2) 4-6.
[30] Cohen, S., Kamarock, T. & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior* 24, 385-395.
[31] Ryff, C.D. (1989). Happiness Is Everything, Or Is It - Explorations on the Meaning of Psychological Well-Being. *Journal of Personality and Social Psychology* 57 (6) 1069-1081.
[32] Neff, K.D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity* 2, 223-250.
[33] Beck, A.T., Steer, R.A. & Brown, G.K. (1996). BDI-II. Beck Depression Inventory: manual. 2nd edn. San Antonio, USA: The Psychological Corporation.
[34] Spielberger, C.D. (1998). State-Trait Anxiety Inventory: Bibliography. 2nd edn. Palo Alto, CA: Consulting Psychologists Press.
[35] Brown, K.W. & Ryan, R.M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology* 84 (4) 822-848.

[36] Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences. 2 edn. Hillsdale, NJ, USA: Erlbaum Associates.
[37] Branch, W.T., Jr. (2000). The ethics of caring and medical education. *Academic Medicine* 75 (2) 127-132.
[38] Wallace, J.E., Lemaire, J.B. & Ghali, W.A. (2009). Physician wellness: a missing quality indicator. *Lancet* 374 (9702) 1714-1721.
[39] Wong, A. (2003). Mindfulness - Rediscovering Satisfaction and Meaning in Medical Education. *Medical Education* 80 (3) 265-267.
[40] Drolet, B.C. & Rodgers, S. (2010). A comprehensive medical student wellness program - design and implementation at Vanderbilt School of Medicine. *Academic Medicine* 85 (1) 103-110.
[41] Warnecke, E., Quinn, S., Ogden, K., Towle, N. & Nelson, M.R. (2012). A randomised controlled trial of the effects of mindfulness practice on medical student stress levels. *Medical Education* 45 (4) 381-388.
[42] Irving, J.A., Williams, G., Chen, A., Park, J. & Dobkin, P.L. (2012). Mindfulness-Based Medical Practice (MBMP): A mixed-methods study exploring benefits for physicians enrolled in an 8-week adapted MBSR program. AMA-CMA-BMA International Conference on Physician Health (ICPH), Montreal, Quebec, Canada.
[43] Allen, D., Wainwright, M., Mount, B. & Hutchinson, T. (2008). The wounding path to becoming healers: medical students' apprenticeship experiences. *Medical Teacher* 30 (3) 260-264.
[44] Boyce, B., Kabat-Zinn, J., Siegel, D., Hanh, T.N. & Kornfield, J. (2011). The Mindfulness Revolution: Leading psychologists, scientists, artists, and meditation teachers on the power of Mindfulness in daily life. 1st edn. Boston, MA: Shambhala Publications.
[45] Fortney, L. & Taylor, M. (2010). Meditation in medical practice: a review of the evidence and practice. *Primary Care* 37 (1) 81-90.
[46] Satir, V., Banmen, J., Gerber, J. & Gomorri, M. (1991). The Satir Model: Family Therapy and Beyond, pp. 65-84. Palo Alto, CA: Science and Behaviour Books.
[47] Hutchinson, T.A. & Brawer, J.R. (2011). The Challenge of Medical Dichotomies and the Congruent Physician-Patient Relationship in Medicine. In: Whole Person Care: A New Paradigm for the 21st Century. (Hutchinson, T.A., ed.), p. 31-43. 1 edn. New York, NY: Springer.
[48] Beach, M.C. & Inui, T. (2006). Relationship-centered care. A constructive reframing. *Journal of General Internal Medicine* 21 (Supplement 1) S3-S8.
[49] Dobkin, P.L., Hutchinson, T.A. & Zhao, Q. (2012). Mindful medical practice for medical students and residents: an invitation to exchange experiences. Presented at the 10th Annual Scientific Conference: Investigating and Integrating Mindfulness in Medicine, Health Care and Society, Boston, MA.
[50] Imel, Z., Baldwin, S., Bonus, K. & Maccoon, D. (2008). Beyond the individual: group effects in mindfulness-based stress reduction. *Psychotherapy Research* 18 (6) 735-742.