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Educational innovations to foster resilience in the health professions

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\textbf{ABSTRACT}

Stress and burnout of healthcare providers has become a major healthcare issue that has implications for not only workforce projections, but the cost and quality of care and the lives of healthcare providers and their families. Burnout, characterized by loss of enthusiasm for work, feelings of cynicism and a low sense of personal accomplishment is associated with early retirement, alcohol use, and suicidal ideation. Healthcare professional "wellbeing" or "care of the caregiver" is a topic that has not been significantly addressed in the education of healthcare professionals. The culture that has dominated much of education has been one where students have been expected to forego personal needs, endure stressful environments, and emerge from highly competitive and often dysfunctional environments to work in care settings where health and wellbeing is also largely ignored. Three curricular innovations are highlighted that target pre-professional students, students enrolled in health professions education and practicing health care professionals. Strategies are highlighted that both help individuals cultivate resiliency and wellbeing in their personal and professional lives and that address system issues that contribute to unhealthy learning and work environments.

\section*{Introduction}

Over the past three decades, there has been considerable focus globally on the healthcare workforce by the World Health Organization (WHO) and individual nation states (WHO 2016). Workforce analyses are generated from supply and demand projections based on demographics, the incidence of disease, and the current availability and anticipated need for physicians, nurses, and other health professionals. In the U.S., the National Center for Health Workforce Analysis within the Bureau of Health Professions, of the Health Resources and Services Administration (HRSA) is the federal agency responsible for collecting, analyzing, and disseminating health workforce information and facilitating national, state, and local workforce planning efforts (BHPR 2016). According to a recently released report projecting the supply and demand for primary care practitioners through 2020, if the system for delivering primary care in 2020 were to remain fundamentally the same as today, there will be a projected shortage of 20,400 primary care physicians. Under a scenario in which primary care nurse practitioners (NPs) and physician assistants (PAs) are fully integrated into healthcare delivery, such as in the context of patient-centered medical homes that emphasize team-based care, the projected shortage of primary care practitioners in 2020 could be somewhat alleviated (BHPR 2016).

What is generally not taken into account with current workforce planning methodology, is the health and wellbeing of the workforce. Stress and burnout of healthcare providers has become a major healthcare issue that has implications for not only workforce projections, but the cost and quality of care and the lives of healthcare providers and their families as well. Burnout, characterized by loss of enthusiasm for work, feelings of cynicism and a low sense of personal accomplishment (Maslach & Jackson 1981), is associated with early retirement, alcohol use, and suicidal ideation (Shanafelt et al. 2012; Friedberg et al. 2013). A 2014 survey (Kane & Peckman 2014) found that 68% of family physicians and 73% of
internists would not chose the same specialty if they were to start their careers anew.

A plethora of research has documented the severity of burnout and its impact across the health professions (Montero-Marin & Garcia-Campayo 2010; McHugh et al. 2011; Shanafelt et al. 2012; Udod & Care 2013; Salyers et al. 2015; Shanafelt et al. 2015). There is evidence that burnout in U.S. physicians is getting worse. According to an update from a three-year study evaluating burnout and work-life balance, American physicians are worse off today than they were three years earlier. The study conducted by Mayo Clinic researchers in partnership with the American Medical Association compared data from 2014 to metrics they collected in 2011 and found that now more than half of U.S. physicians are experiencing professional burnout (Shanafelt et al. 2015). They note that burnout leads to poor care, physician turnover, and a decline in the overall quality of the healthcare system. In the 2011 survey, 45% of physicians met the burnout criteria, with highest rates occurring in the “front lines” – general internal medicine, family medicine and emergency medicine. In 2014, 54% of responding physicians had at least one symptom of burnout. Satisfaction with work-life balance also declined. The survey results were based on 6880 physicians across the United States, a 19% response rate, as well as a population based sample of 5313 working U.S. adults in other fields. While the rate of burnout in nursing is not as high as in medicine, it is still significant. McHugh et al. (2011) found that 34% of hospital nurses and 37% of nursing home nurses report burnout.

Physician suicide is also increasing. Hampton (2005) in reviewing studies over the preceding four decades, found that compared with non-physicians, the prevalence of suicide among physicians is higher than the general population. He estimated that the risk of suicide was 70% higher for male, and 250–400% higher for female physicians.

As healthcare scrambles to respond to patient needs and fiscal realities and workforce projections, the concept of the triple aim (Berwick et al. 2008) has been introduced as a way to optimize performance. The focus of the triple aim is on improving the health of the population, improving patient experience and reducing costs. Bodenheimer and Sinsky (2014) have proposed that the triple aim be expanded to a quadruple aim, adding the goal of improving the work life of healthcare providers, including clinicians and staff. In noting that care of the patient requires care of the provider, they make a strong case that organizations should be focusing on the health professional as well as the whole care team wellbeing.

Healthcare professions education

Healthcare professional “wellbeing” or “care of the caregiver” is a topic that has not been significantly addressed in the education of healthcare professionals. In fact, the culture that has dominated much of education has been one where students have been expected to forego personal needs, endure stressful environments, and emerge from highly competitive and often dysfunctional environments to work in care settings where health and wellbeing is also largely ignored.

Given this reality, it is not surprising that studies have consistently demonstrated that empathy declines in both medical students and residents over the course of their training. In a systematic review of studies concerning trainee empathy published from January 1990 to January 2010, 18 studies were examined, 11 on medical students and seven on residents. Neumann et al. (2011) reported that three longitudinal and six cross-sectional studies of medical students demonstrated a significant decrease in empathy during medical school. Similarly, the five longitudinal and two cross-sectional studies of residents showed a decrease in empathy during residency.

It has been suggested that physicians may experience a significant amount of stress because of the way medical schools train them (Montgomery 2014). The training focuses heavily on technical abilities, with little emphasis on understanding social interactions with patients, coworkers and collaborating in teams within a hospital. And across healthcare graduate education much emphasis is given to examining and understanding pathology, but little focus has traditionally been afforded to resiliency techniques that have been scientifically verified to impact executive brain function, affect reactivity, empathy, and the ability to attend to task. All of these attributes influence the cognitive, emotional, and relational skills that are critical to personal, professional, and organizational success.

In 2004, the Academic Consortium for Integrative Health and Medicine (formerly called the Consortium of Academic Health Centers for Integrative Medicine) published a set of competencies on integrative medicine that they proposed be adopted in medical school curricula. While some of the competencies reaffirmed humanistic values inherent within the practice of all medical specialties, others were more specific to the practice of integrative medicine and included a focus on the knowledge and skill needed to practice an integrative approach to healthcare including the most commonly used complementary/alternative medicine modalities. This paper was one of the first to identify the importance of provider self-care as a core competency of a healthcare provider. Kligler et al. (2004) advocated that a graduating physician be able to design a personal self-care program that includes assessing one’s level of stress and implementing a self-care strategy. There is no data on the number of medical schools that have adopted these competencies or who have adopted curricula on self-care.

A decade later, a set of interprofessional competencies for integrative primary care were published under a grant initiative funded by HRSA based at the University of Arizona. The goal of the grant is to develop competencies that ultimately become a required part of primary care education for physicians, NPs, and other primary care providers. Among the 10 competencies identified is one focused on self-care. Primary care providers should have the knowledge and skill to engage in personal behaviors and self-care practices that promote optimal health and wellbeing (Kligler et al. 2015).

In November 2015, the Accreditation Council for Graduate Medical Education convened a symposium to focus on the issue of physician wellbeing. The goals of the symposium (ACGME 2015) were to understand the problem across the continuum; to advise the ACGME Board of Directors on how the organization can be an effective agent of positive transformational change for resident/fellow wellbeing and the creation of more humane training environments; to begin a national dialog on physician wellbeing and the creation of more humane training environments.
wellbeing that leads to positive, transformational change in the learning environment for medical students, residents/fellows, faculty members, and practicing physicians and to begin ongoing collaborations and relationships with other organizations inside and outside of medicine to effect positive transformational change in support of wellbeing of healthcare professionals. While a definitive set of recommendations did not emerge from this inaugural gathering, a recommendation was made to the ACGME board to approve an action plan that included the creation of a physician wellbeing taskforce and a process that focuses on strategies to create meaningful and lasting change.

Curricular innovations

In tandem with the published literature on the prevalence of burnout and compassion fatigue (Kearney et al. 2009; Showalter 2010; Friedberg et al. 2013), there has been an increasing number of research studies utilizing mindfulness based interventions (MBIs) that effectively address issues of burnout, stress (Shapiro et al. 2005; Pipe et al. 2009), compassion fatigue (Moll et al. 2015), and work satisfaction across practicing healthcare professions (Krasner et al. 2009; Fortney et al. 2013; Duchemin et al. 2015; Klatt et al. 2015). Three curricular innovations from the University of Minnesota, Georgetown University, and The Ohio State University will be highlighted. These innovative courses incorporate mindfulness-based interventions while addressing different ends of the educational spectrum. The University of Minnesota initiative focuses on students and graduates in the health professions. At Georgetown University School of Medicine there are courses for medical students, as well as for graduate students and residents in anesthesia, while the course at The Ohio State University targets undergraduate pre-professional students.

Resiliency and wellbeing for health professionals

To provide relevant content to health professionals in a manner that is both accessible and sustainable, the Center for Spirituality & Healing at the University of Minnesota created an eight week online course focused on resiliency and wellbeing. As described in Table 1, the course has nine learning objectives that focus on stress, wellbeing, healthy lifestyle, mindful awareness, resiliency, self-care, and strategies for sustaining change. By design, the course includes content on both personal as well as care team wellbeing.

Students begin the course by completing a self-assessment of their own wellbeing using the Center’s wellbeing model (see Figure 1). Areas addressed include physical, mental, and emotional health; purpose and meaning (alignment of life with gifts, values, and passions), relationships

<table>
<thead>
<tr>
<th>Table 1. Resiliency and wellbeing for health professionals course objectives.</th>
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<tbody>
<tr>
<td>1. Discuss what stress is and how it can impact your wellbeing and behavior.</td>
</tr>
<tr>
<td>2. Identify stressors common to people in all health professions as well as those unique to specific professions and/or individuals.</td>
</tr>
<tr>
<td>3. Discuss wellbeing in the relational, social, and environmental context in which health professionals live and work.</td>
</tr>
<tr>
<td>4. Discuss the role of healthy lifestyle; perceptions and thoughts; and values and purpose in enhancing wellbeing in health professionals.</td>
</tr>
<tr>
<td>5. Develop skills to enhance mindful awareness and apply them to self-care.</td>
</tr>
<tr>
<td>6. Identify areas to enhance current wellbeing.</td>
</tr>
<tr>
<td>7. Discuss self-care strategies that enhance resiliency.</td>
</tr>
<tr>
<td>8. Identify strategies for implementing and sustaining change.</td>
</tr>
<tr>
<td>9. Develop and implement a personal plan for self-care in a health professional setting.</td>
</tr>
</tbody>
</table>

Figure 1. Center for spirituality & healing wellbeing model.
Table 2. Resiliency and wellbeing for health professionals course feedback

- “Before taking this course, I was aware that my personal values and purpose are tied to my professional role and practice environment, but I was not fully aware of the extent to which my self-care practices could reinforce and inform my professional identity. The mindfulness practices that I have learned in this course, such as meditation and daily self-reflection, have improved my well-being and actually have made me more effective in my daily work over the past two months.”
- “Healthcare has some of the highest burnout rates of any profession. Therefore, it is essential that teams are intentional about implementing self-care practices that increase resiliency. While well-functioning teams are essential in providing excellent patient care, practicing self-care as individuals is necessary to bringing your best self to the team.”
- “Daily mediation, movement and eating well will help me to reduce anxiety, stress and burnout while increasing my levels of empathy and compassion.”
- “A sense of community and connection has reduced my stress. Being able to identify my purpose and values has increased my happiness. The long term health benefits that result from this self-care plan will allow me to continue to provide for others.”
- “This course has allowed me to explore, understand, learn and take the time to reflect about resilient and self-care based living that will allow me to not only be a better professional, but also a better coworker, spouse, friend and human-being. I am committed to practicing what I have learned and continuing to grow in my pursuit of self-care, well-being and living a whole and healthy life.”

(connections to family and friends), security (money, finances, and ability to cope with fear), connection with community and the physical and natural environment that surrounds the student.

Weekly, the students complete readings, watch videos, participate in online discussions and engage in reflective writing. The discussion groups are limited to 4–5 students to foster sharing, intimacy, and safety. A major emphasis is on learning practices that can help them manage stress, cope with challenging situations, and cultivate resiliency. The course was designed using best practices including usability guidelines, community of inquiry principles, strong teacher presence, and learning and motivational theory.

One version of the course has been taught to interdisciplinary groups of learners. These cohorts have been very diverse and have included MDs, NPs, doctoral nursing students, mental health professionals, social workers, chaplains, healthcare administrators, and public health professionals. Students who enrolled in these initial cohorts chose the course as an elective and took the course for one graduate-level academic credit. The student response has been overwhelmingly positive. A sample of representative student feedback is provided in Table 2. Quantitative data is being collected over multiple cohorts and is not yet available for publication.

The largest medical residency program at the University of Minnesota is building this course into the first year intern/resident experience for all incoming medicine residents. Faculty in the department will have the option of going through the course as a cohort prior to the residents, setting the stage for one faculty member to serve as a co-facilitator in the resident’s course. This course is part of a comprehensive resiliency and wellbeing program for the residency program. Data will be collected on a number of outcome measures including perceived stress, burnout, and overall wellbeing. Unlike earlier cohorts of the course, this one will include only residents in the medicine program and will be required rather than elective. It is unclear how this will impact receptivity to the course, student feedback, and outcomes.

Finally, a noncredit, professional development version of the course has been developed and is available for health professionals employed in clinical and community-based settings. The Resiliency and Wellbeing for Health Professionals course in all formats is an accessible, scalable, and sustainable intervention that is responsive to the need to improve the health and wellbeing of the workforce.

Mind-Body Medicine Skills (MBMS) for medical students

The MBMS course at Georgetown University School of Medicine was developed to foster medical students’ capacity for self-awareness and self-care by teaching techniques grounded in mind-body medicine. Taught since 2002, the course initially was aimed at medical students, but now has been expanded to include graduate students (Saunders et al. 2007) and residents in anesthesia, and over 3000 participants. Furthermore, faculty from schools in the US and in Europe have been trained by the program leaders to implement this course at various medical schools in the US, as well as in Germany (Brinkhaus & Witt 2012) and Sweden (Van Vliet et al. 2014).

The format of the course is consistent and includes both didactic and experiential content that contributes to deep learning. Groups of 10 students meet 11 times over consecutive weeks for two hours with faculty facilitators. The sessions take place in quiet settings either on or off campus. Each session includes an opening meditation, personal sharing in a check-in period, and then introduction of a new mind-body practice. The experiences include autocgenic training, guided imagery, journal writing, and meditation and also include art, movement, and music. Outcome studies indicate that perceived stress and negative affect are reduced, while empathy and positive affect is enhanced in the participants.

Mindful resilience: from the individual to the organization – an undergraduate honors course for pre-professional students

An honors course at The Ohio State University, Mindful Resilience: From the Individual to the Organization, was designed to equip pre-professionals with the skills and practices to preempt burnout and compassion fatigue, while inviting them to design a self-care program by course completion, as previously suggested for medical students (Kligler et al. 2004). Course design was informed by the recognition of the necessary quadruple aim, “care of the provider” (Bodenheimer & Sinsky 2014) as pivotal to delivering quality patient-centered care. This was intentionally done in hope that the undergraduates (our future healthcare professionals) will embed such practices in the design of the healthcare organizations that they will someday occupy. Undergraduate courses contemplating a liberal arts notion of what comprises a “good life” are multiplying in the U.S. and have been effective in helping students see the connections between an internal focus and subsequent external impact (Berrett 2014). Students recognize by semester end the absolute necessity of being proactive about one’s self-care in order to adequately care for ones patients. The earlier a student is made aware of
the existing challenges encountered by healthcare practitioners, the sooner they may be open to developing wellness practices and strategies, and organizational structures, to sustain them through graduate education and beyond.

The course begins with an exploration what gives meaning and purpose to life, and how one’s sense of meaning is related to being resilient. The major focus of the course is how this is played out both on an individual and on an organizational level. Reflective mindfulness practices are a cornerstone of this innovative undergraduate course, with mindfulness defined as present-centered awareness (Brown & Ryan 2003). Research points to the efficacy of mindfulness in strengthening stress resilience, interpersonal skills, and the cognitive capabilities of attentional skill/control and the processing of information in higher education (Shapiro et al. 2011). Students explore the scholarly evidence behind mindfulness and other reflective practices, as related to both individual and organizational health (Good et al. 2015), in addition to learning from seasoned healthcare professionals who share their own resilience strategies that have sustained them throughout their educational and professional career. See Figure 2 for the elements included in the course structure. The two resiliency themes most reflected upon by the students after hearing a guest speaker were the importance of self-care for the healthcare professional, and the interplay between individual action and the organization. See Table 3 for student reflections.

Table 3. Resiliency themes detailed by guest speakers.

<table>
<thead>
<tr>
<th>Resiliency themes touched on by guest speakers</th>
<th>Student reflections on the speaker presentation, specifically noting the theme</th>
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<tbody>
<tr>
<td>The importance of self-care</td>
<td>Even in a helping profession, it is paramount to take care of oneself- it is the foundation of being able to give to others consistently. It is easier to make a change when you’re not doing it alone. Your well-being affects those around you. The key is to find the meaning in your work – find the type of clinical practice you can be passionate about, and then you will both taking care of yourself and your patients. One person’s positive change can impact others as a pebble in the ocean, it ripples outward. Personal resilience is multifaceted, especially to long-term practice, every time you see someone succeeding in public, it’s because they have been doing it for years in private. You need to find balance between your place in an organization and your individual identity. It is of the utmost importance to support each other in being mindful. This leads to better mindsets for individuals, better relationships and ultimately better outcomes for the patient. I appreciated him saying that he forces his interns to take lunch- he feels that they will be more on their game if they take a time out. He feels that it’s important objectively for people in his organization to take care of themselves.</td>
</tr>
<tr>
<td>Interplay between individual action and organizational culture</td>
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</tbody>
</table>

Figure 2. Mindful resilience: from the individual to the organization course elements.
Integrating contemplative tools into biomedical science education has successfully been used before to broaden perceptual awareness, decrease emotional drama, and mobilize whole body strategies for creative problem solving to augment career-long problem solving skills (Dietert 2014). Similarly, these strategies were used to help students become increasingly self-aware and better at self-regulatory skills to position themselves for a resilient professional educational experience and member of the healthcare professional workforce.

In addition to invited guest speakers, each student interviews a healthcare professional from the area of the specific clinical practice that they intend to enter. Via the interview, students explore specific challenges that the practicing professional faces, particular approaches to resiliency, what they consider to be essential leadership skills, and the potential application of mindfulness to the specific organizations for whom they work. Students then highlight learnings garnered from their individual interviews with the larger class. Common stresses voiced in the interviews included the stress resulting from constant change within the healthcare organization itself, the necessity of constant multi-tasking, understaffed work environments, system related stress, and the amount of time spent interacting with the computer compared to interaction with the patient. Each of these stresses point to the interplay between the individual and the organization. Students noted that the professions who most “knew who they were, what gave them meaning, and knew why they were in healthcare” embodied the best self-care and resiliency practices. Learning about the particular stresses of clinicians allows students time to strategically brainstorm ways to address them before they are immersed in the stress themselves. Each of the course elements (Figure 2) provided the necessary background informing individual student “resiliency plan” final presentations. Each presentation provides the entire class a lens on various ways to deal with the challenges of becoming, and being, a healthcare provider. Student evaluations have been strongly positive, including comments such as, “I needed the space that this course provided to plan for the resilient career that I hope is ahead of me. I believe my resiliency plan will inform the way I approach medical school and beyond. My goal is to be asked by you to speak to your students in this class 10 years from now and tell them how I have lived out these concepts”.

Discussion

The health and wellbeing of the healthcare provider workforce requires attention now, so that the projections for increased need for primary care providers (BHPR 2016) can be met. In addition to the organizational delivery of effective resiliency interventions for the current workforce, the accrediting bodies of the health professions that regulate educational requirements need to be fully engaged and proactive. If self-care and provider wellbeing is deemed critical, then resiliency tools and strategies must be delivered within health profession curricula. Health professional education needs to embody the self-care tenets that clinical practice requires for individuals and healthcare organizations to deliver high quality patient care. If it fails to embody these tenets, we will continue to see the current rates of healthcare professional burnout and subpar levels of empathy in healthcare professions.

Emerging innovative curricula need to be embraced and expanded. There are various entry points for this type of education, from undergraduate courses such as Mindful Resilience: From the Individual to the Organization, which targets honors students preparing for graduate level healthcare education, to trainee and graduate programs that are accessible, scalable and sustainable, such as Resiliency and Wellbeing for Health Professionals and the Mind-Body Medicine Skills course. Research exploring the longitudinal impact of these courses is critical, to verify whether or not introduction of resiliency concepts at the undergraduate, graduate, and post-graduate level can effectively circumvent as well as address burnout and compassion fatigue and improve resiliency and wellbeing.

Conclusions

The wellbeing of the workforce has not been a major consideration in workforce planning yet it may significantly impact the trajectory and longevity of a health professional’s career. Stress, burnout, depression, and compassion fatigue are well documented risk factors that compromise patient care, erode the wellbeing of health professionals and contribute to premature exit from careers in health professions.

Competencies generated by organizations outside of accrediting bodies can generate awareness and stimulate curricular innovation. They lack, however, the clout of accrediting bodies. If self-care and provider wellbeing is to become deeply integrated into curricula of the health professions, it will require action by groups such as the AAMC and ACGME in medicine and relevant groups in other health profession disciplines.

Health professionals make a unique and critical contribution to the health and wellbeing of those they serve. While being a physician or nurse has long been considered a noble profession, it is now understood that a career in healthcare is also laden with significant risks as well as rewards. Strategies are needed that both help students and health professionals cultivate resiliency and wellbeing in their personal and professional lives and that address system issues that contribute to unhealthy learning and work environments. While longitudinal research is needed, educational innovations such as those described in this paper show promise in helping practitioners develop coping and resiliency skills that may help to ultimately preempt burnout.

Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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