# Humanism and Resilience in Residency Training

## A Guide to Physician Wellness

Ana Hategan
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# Foreword

Wellness has gained increasing attention as a focus for educators and clinicians alike. The Institute for Healthcare Improvement (IHI) has shifted its focus from the Triple Aim (enhancing patient experience, improving population health, and reducing costs) in 2007 to the quadruple aim in 2017, which newly incorporates the care team well-being [1, 2]. This important change marked a fundamental shift in viewing the sustainability of our care teams as crucial for ensuring the health of those we serve.

This shift in thinking has led to a veritable explosion of interventions, ranging from workload modifications to scheduling solutions [3, 4]. Numerous systematic reviews have cited trials of randomized, non-randomized, quasi-experimental, and quality improvement studies that aim to address this situation. In addition, while the science may be important to conduct, so too are works like this book. Translating the science into usable works of scholarship can help highlight and make accessible the evidence-informed strategies for improving wellness in the current climate.

Meanwhile, in the educational sector, there has been increased attention to ensuring patient safety through duty hour restrictions. In the wake of the tragic death of Libby Zion, North America was forever changed in terms of its emphasis on duty hours restrictions for the most junior members of our teams [5]. And yet, the evidence is mounting that perhaps with duty hours restrictions, the unintended consequences of increased handoffs and transitions in care may have resulted in a zero-sum improvement overall [6].

When addressing physician wellness, one cannot look at the causal factors in isolation, but rather as gears in a system where real change would involve a collaborative approach. The issues of learners balancing service with education, independently managing large workloads, dealing with difficult patient encounters without debriefing, working long hours without breaks, and sleep deprivation all play into each other and are a result of the way the system is organized [7, 8]. This can result in trainee physicians working in toxic environments with minimal autonomy over their schedules. Rather than addressing the root cause, physicians are often tasked to become more resilient, which by itself is a useful learned skill; however, placing emphasis on the affected puts the onus of burnout prevention on the individual while the aforementioned systemic factors remain status quo.

This is worsened by the fact that the hidden curriculum often chides learners for criticizing the system, because the culture wrongfully equates seeking wellness with laziness [9]. This book does an excellent job of addressing the individual factors, but goes further to face head on the fact that systemic change must be targeted at the institution rather than stopping at the individual. Furthermore, the culture itself must change, and this text beautifully describes how we must transition to an ideology of humanistic practice as a strong foundation for this movement. This will aid us in moving away from retroactive remedies for burnout toward creating a culture of safety and wellness ingrained into learners from their early training. This requires developing a culture of kindness and humanism, which allows for self-compassion and the collaborative confrontation of factors contributing to burnout.

There are many books that talk about individualist strategies around fostering wellness and resilience, but this book is one that does an excellent job at acknowledging the world beyond and its impact on the individual. To us, the most helpful part of this compilation is that it goes beyond placing the burden of resolving

burnout on the resident and discusses building a culture of humanistic practice in medicine to combat it.

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# Preface

Physicians experience high rates of burnout resulting in diminished quality of life and quality of patient care [1, 2]. Burnout symptoms are especially common in the early stages of a physician's career and are particularly prevalent among residents [1]. The culture of medicine has promoted a myth that physicians are either immune to stress or that they do not become ill, perpetuating ideologies of stigma for those in need of support. Physicians have traditionally neglected their own health in favor of their many professional and personal roles and obligations [3, 4]. Many physicians have trait characteristics such as being independent, competitive, and have a track record of being high achievers, which may lead to an ethos of believing that attention paid to their own needs is secondary and potentially a sign of weakness. However, recently there has been an attitudinal shift, and increasing attention is being paid to physician health and well-being. This is partly attributable to evidence linking patient outcomes to physician wellness, and also to the devastating statistics of physician suicide. Wellness and self-care are now considered core competencies by medical education accreditation bodies, with expectations for medical schools to formally teach these skills in the curriculum, and for physicians to demonstrate a commitment to their own health and sustainable practice [3, 5–7]. Therefore, the approach to supporting physicians' physical and psychological health is shifting from a focus on treatment of established medical conditions to one of promoting well-being, improving self-care, and preventing illness.

Thus, strategies to prevent and mitigate burnout are becoming essential during residency training. Physicians' responses to the stresses of medical practice vary. Some are at increased risk of developing depressive and anxiety symptoms, substance use disorders, and even considering or attempting suicide. Others will find ways to thrive under the high stress and pressure, even actively welcoming the numerous challenges that are associated with postgraduate medical education. Although many will experience exhaustion and sleep disruption at high stress periods, they will simultaneously manifest resilience by employing strategies to manage and recover. The traits that reinforce these responses to the stress of medical practice are considered amenable to intervention and change. Four of the "Big Five" personality traits (agreeableness, extraversion, openness, and conscientiousness) have been associated with resilience, whereas the tendency to easily experience negative emotions (or "neuroticism") has been negatively correlated [8].

The *Humanism and Resilience in Residency Training: A Guide to Physician Wellness* aims to help identify adaptive individual traits and positive formal initiatives in residency training programs, while challenging those that are less adaptive and supportive. Moreover, recent evidence shows that introducing humanism in medical curricula during residency can diminish the risk of trainee burnout [9]. Unfortunately, few residency programs have formal humanism curricula for teaching this critical aspect of medicine, despite being a central tenet of professionalism and a required competency for all physicians. Therefore, this book intends to address this need.

Although focusing our attention on individual factors is important, investment in providing optimal training and work environments is an essential component for the promotion and support of physician well-being. Research has indicated that resilience generally depends more on the resources received than on one's innate abilities or positive attitude [10]. The environment has an enormous effect on our collective capacity to thrive as physicians. In 2019, the World Health Organization included burnout as an occupational phenomenon in the 11th Revision of the International Classification of Diseases (ICD-11) [11]. No amount of

personal development is sufficient to support health and success in our training and workplace if the system and its institutional leaders offer inadequate support and a maladaptive or dysfunctional structure. As long as services are underfunded and understaffed, facilities are suboptimally managed, and administrators are inexperienced or disengaged from the realities of practicing physicians, physicians will continue to burn out and struggle. When it comes to pursuing success and maintaining well-being, the environment matters just as much, if not more, than an individual's thoughts, feelings, and behaviors, and this book addresses these issues. Seeking out relationships that nurture each other, opportunities to use our talents, and places where we experience support and personal reward will further our ability to find meaning and wellness in our work and lives.

Therefore, residency programs that create and support a culture of both wellness and resilience are more likely to produce graduates who are well prepared for this era of sustainable medicine. Moreover, in this time of environmental crisis, we need to rapidly address necessary change in medical culture to meaningfully address its carbon footprint and impact on climate change. We need sustainable, cost effective models of healthcare that provide sufficient resources now, while thoughtfully planning ahead for adaptations to meet ever changing societal healthcare needs. The modern physician must learn to adapt and work in this complex and dynamic model. Therefore, physicians must develop and nurture resilience so that they may sustain their effectiveness in an environment that is rapidly changing.

The contemporary healthcare industry confronts two trends: (i) an influx of new generations of physicians with changing career and life expectations compared to previous generations, and (ii) recognition of the perils of physician burnout. Thus, an increasing number of physicians are speaking up and pushing back against unreasonable work schedules and unsustainable job demands. Healthcare leaders need to recognize the signs of such systemic problems and be proactive in redesigning the physician's work and environment such that physicians are provided with the required resources, tools, and autonomy to deliver optimal patient care, experience workplace satisfaction, and sustain well-being.

Physicians are seeking strategies to promote their own well-being and achieve success in their careers. In our contemporary, dynamic, and fast-paced medical practice, there is a trend towards training for adaptive and resiliency skills. This volume offers an integrated approach to resilience and well-being during residency training including engaging mindfulness and meditation practice, cognitive behavioral strategies for stress awareness, and positive psychology strategies for perspective taking, finding meaning, and supporting personal change, as a few examples. Through this book, our goal is to encourage discussion and consideration of lifestyle modifications to improve physical and psychological health and well-being, including the identification of supportive and detrimental lifestyle factors influencing physicians' responses to stress. We emphasize the importance of advocating for systemic change and redesigning systems to promote physician well-being in the sustainable medicine era.

Although this resource is primarily designed for residents to help them adapt to challenges, enhance their ability to find meaning, promote resilience, and maintain a positive perspective on work-life integration, any busy healthcare professional interested in learning the fundamentals of personal wellness can greatly benefit from its perusal. Undergraduates will find this book a useful wellness resource for their clinical placements.

Written and edited by residents and academic physicians, this book shares personal and clinical experiences supplemented with evidence-based information and contemporary guidelines. Key features include easy-to-reference, heavily illustrated, content-specific guidance on how to identify and manage wellness challenges that arise during medical training, written succinctly and with clinical relevance. Any similarity to real/actual cases in the case vignettes presented in the book is purely coincidental.

The editors have built their careers on experiences as both physicians as well as educators, which has informed this wellness guide. This book provides a hands-on, real-world approach to learning that will keep readers engaged and expand their understanding of key factors that affect wellness, including strategic techniques for optimizing resilience and well-being. It is our hope

that this book remains a well-used reference for physicians during residency training and throughout professional medical practice.

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# Part I

# The Foundation of Introducing Humanism in Medical Curriculum

# Humanism and the Physician

1

Heather Waters, Christine Foster,
Dilshan Pieris, Sarah Kinzie,
and Joyce Zazulak

## Understanding Humanism in Medicine

### What Is Humanism in Medicine?

In the daily practice of medicine, physicians apply scientific principles with varying levels of evidence to enhance the health and wellness of fellow human beings, that being their patients. Physicians must wrestle with and ultimately reconcile the subjectivity of human relationships with the objective detachment of science in order to optimize the effectiveness of their work. The potential for tension between these two domains has been apparent since the earliest days of medicine: even ancient philosophers who lived in a world before modern science recognized the existential dangers of an imbalance between the two [1, 2]. The physi-

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cian is often the singular embodiment of this tension, sometimes struggling in a tug of war between two professional identities, trying simultaneously to preserve their own humanity, connect meaningfully with patients, and keep pace in an increasingly complex scientific and technological world.

**Did You Know?**

*Humanism in medicine has been defined as "the application of scientific knowledge and skills with respectful, compassionate care that is sensitive to the values, autonomy and cultural needs of individual patients and their families" [3].*

Humanism is an approach to patient care that acknowledges both the importance of *scientific* knowledge of the patient's disease process and *biographical* knowledge of the patient's social environment, values, and goals [4]. Biographical knowledge requires getting to know one's patient as a *person*, unique in their identity, context, illness experience, and determination of meaning. Humanism is rooted in the core values of empathy, compassion, relationship-based care, and professionalism [5]. A humanistic approach recognizes that physicians use the "lived-body" and the "lived-world" as foundations for understanding the human condition and thus, the patient experience [6]. A physician must have a scientific understanding of the "biological body" as well as a humanistic understanding of the embodied nature of each patient's illness experience [7]. A humanistic grounding allows the physician to understand the impact of illness on patients' lives, "not just as a secondary effect of the biological disease, but as a primary phenomenon" [8].

While humanism has long been recognized as a core philosophical value of medicine, it was only recently articulated as a core clinical competence for residents and practicing physicians, likely as a response to numerous challenges and flaws in contemporary medical practice [9]. Physicians and patients must both contend with powerful dehumanizing forces that comprise the daily realities of medicine. These include an increasing depen-

dence on technology, a diminishing amount of time spent directly with patients, growing financial pressures, and intensifying bureaucracy in medicine. Yet, the more enduring inspiration for the campaign to restore humanism is recognition of its role as a countervailing force acting alongside science that enables physicians to address patients' needs for wellness, healing, and alleviation of suffering.

**Did You Know?**

*The terms "**health**" and "**wellness**," although often used interchangeably, are distinct concepts. As per the World Health Organization, health is an objective "state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity" [10]. Wellness is an active, dynamic, and holistic process that is subjectively perceived and self-directed; it relates to decisions of intentional healthy living and optimizing potential [11].*

*There is an important distinction between "**disease**" and "**illness**"; disease is a biomedical abnormality that is physiological or psychological in nature; illness is experiential, the lived human response to disease (also referred to as "**illness experience**").*

*There is a difference between "**curing**" and "**healing**"; curing is the elimination of all evidence of disease, while healing involves the promotion of wholeness and wellness. Even when curing is not possible, physicians have the ability to promote healing through a humanistic approach to practice.*

## Limitations of the Biomedical Model

Rapid progression of scientific knowledge has created and sustained the biomedical model of disease, which has become the dominant paradigm in medical culture, education, and healthcare policy [12]. This model of disease emerged in the 1950s alongside swift developments in medical science, including the dis-

covery of specific disease processes and disease-causing agents. Biomedicine "assumes disease to be fully accounted for by deviations from the norm of measurable biological variables" [6]. In other words, the biomedical model posits that any given disease can be aptly described by its underlying biological, chemical, and physical mechanisms. Knowledge of the parts is sufficient to explain the whole.

There are three main problems with the biomedical model of disease that humanism seeks to redress. The first is that biomedicine is reductive. Molecules, transmitters, and receptors are seen to represent the most valid level of knowledge, presumed to be the best way to understand and explain disease. Within this framework of understanding, there is no weight given to the psychological, social, and behavioral dimensions of illness; as such, this approach fails to view human disease as primarily a human experience [13]. For example, understanding the physiology of vasodilation in flushing, the pathways leading to catecholamine release in tachycardia, or the receptors responsible for increasing sweat gland activity in diaphoresis, is meaningless unless one understands the underlying human causes: embarrassment, anxiety, and nervousness.

Second, the biomedical model of disease is "exclusionistic"; in other words, symptoms and processes that are not understood by current biological explanatory models are excluded from the field of medicine [14]. The result is that "patients with vague complaints and non-localizable lesions are relegated by biomedical reductionism to a netherworld of hypochondriacs and malcontents" [15]. Through this method, biomedicine has a way of filtering patient complaints into only those problems that can be medically recognized and addressed based on current knowledge. This is discouraging for patients and undoubtedly inspires the caricature of the out-of-touch doctor, as well as the recently trending twitter hashtag "#doctorsaredickheads." When the extent of a doctor's tools to treat disease were entirely contained within a small black bag, the simple value of the supportive, empathic presence was perhaps more apparent.

Finally, biomedicine is incapable of recognizing the limits of science's applicability to humans. In recent years, scientific

and technological discoveries have even obscured the boundary between life and death. Through mechanical ventilators, extracorporeal membrane oxygenation (ECMO) machines, and pacemakers, humanity has been forced to accept that neither brain activity nor the ability to oxygenate and circulate blood are sufficient descriptors of human life. A thousand other smaller scale interventions have given us the ability to prolong life to a point that may no longer be considered meaningful. Biomedicine alone cannot distinguish a life worth living; it can sometimes answer the question of "what," but it can never answer the question of "why." Instead, a patient's values, goals and spirituality, their very concept of a meaningful life, and how much they are willing to suffer to achieve and preserve it, are the most relevant factors. (For further details, see Chap. 16.)

Certainly, the application of scientific models to human health has provided a window to more fully understand disease. As physicians, we can use the explanatory power of the physical sciences to understand some aspects of human function and disease, right down to the most basic anatomic and molecular parts. These parts appropriately become targets for interventions and treatments. We cannot, however, abstract meaning about the human experience from information about the biological parts. If we fail to acknowledge the limits of science, we risk inflicting suffering on the whole person through treatment of the parts [16, 17]. This is the gap that humanism seeks to fill.

Refer to Fig. 1.1 for a representation of the dual importance of the biomedical and humanistic paradigms for effective medical practice.

## Case Study I

Aisha, a medical student, hears a patient desperately calling for water one afternoon on the medicine ward.

"Water! Water!"

She notices that the rest of the members of the healthcare team are busy performing other tasks. The patient is old, frail, and bed bound. The loud pleading continues.

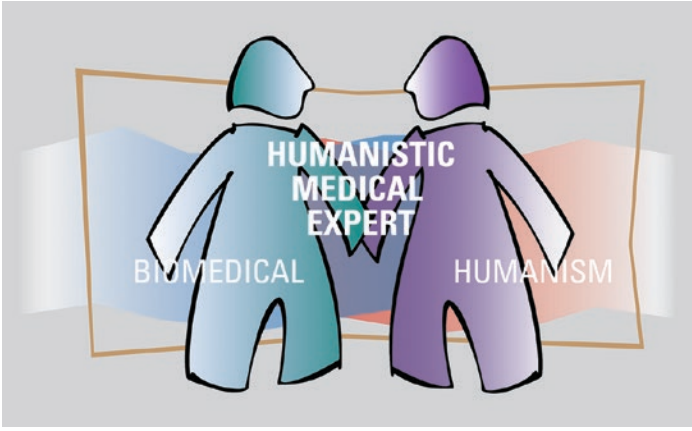


**Fig. 1.1** Humanism and the biomedical model in medical practice

Although the patient is unknown to Aisha and not being cared for by her team, she feels compassion and is unable to walk by his room without helping. She finds the kitchen and fills a Styrofoam cup with the appropriate ratio of ice and water and delivers it to his bedside.

The patient is grateful and settles, and Aisha feels an immediate swell of satisfaction. Although her medical knowledge is limited at this point, she is delighted to have made some small difference to a patient's hospital experience.

Aisha leaves the room without noticing the sign above the patient's bed reading "FLUID RESTRICTION < 1.5 L."

Coincidentally, later that night Aisha reads about the role of fluid restriction in management of the syndrome of inappropriate antidiuretic hormone secretion (SIADH).

***Question 1.*** **In Aisha's development as an effective physician, it will be important for her to build competence in which paradigm(s) of care?**

A. **Humanistic**
B. **Efficient**
C. **Biomedical**
D. **Both A & C**

**Answer: D ✓**
*Both the humanistic (A) and biomedical (C) paradigms of care are integral to effective patient care. In this case, Aisha acted generously and with compassion toward the patient, importantly demonstrating a humanistic approach in helping to alleviate suffering. In spite of her best humanistic intentions, however, she was not able to apply optimal medical knowledge and clinical assessment skills to the situation, in addition to being unaware of the value of team communication. This case illustrates the importance both humanistic and biomedical expertise combined for optimal medical care. Although developing efficiency (B) without compromising quality of care will be important as Aisha progresses through her medical training, this is not a paradigm or model of care.*

***Question 2.*** **Had Aisha known about SIADH and this patient's fluid restriction, how could she have maintained her humanistic approach to care while still respecting the medical recommendations?**

A. **Taking time to talk with the patient about his understanding of the condition and care recommendations**
B. **Empathizing with the patient about the discomfort of thirst**
C. **Exploring options for oral care with the team**
D. **All of the above**

**Answer: D ✓**
*Even when a physician is unable to meet all of a patient's hopes and needs, a humanistic approach to care can still provide comfort and promote well-being. If Aisha had known that providing water was not an optimal medical response to this patient's request, she would still have been able to develop a connection with the patient, provide education (A), empathic support (B), and explore ways to enhance comfort (C). A physician is never without options when it comes to applying humanism in medical care.*

**Key Points**

- A solely biomedical approach to the practice of medicine is inadequate due to three main limitations:
  - Reductionism precluding understanding of the whole patient and their experience
  - Exclusion of that which is not understood or explained based on current scientific knowledge
  - Inability to address essential human concerns of meaning, value, and connection [13–17]
- Humanism in medicine values the human connection between patient and physician, and an understanding of the patient's experience of illness, context, health, and meaning.

## The Humanistic Practitioner

There is a great deal of agreement on the philosophical foundation of humanism. The humanistic physician has an understanding of nonscientific disciplines, which they use to better understand and connect with patients' human context. For example, "the performing arts can 'stretch' perception; ethics can 'exercise' reason; philosophy can 'fine-tune' critical analysis; literature can 'trigger' perspective-taking" [18]. A humanistic physician develops cognitive capabilities that go beyond an understanding of the pathophysiology of disease. The humanistic physician has faculties of the mind which sharpen their ability to reason, judge, remember, emote, contextualize, and imagine.

Yet, medicine is fundamentally a task-based profession. The daily routine of ordering tests, reviewing labs, dictating, and documenting—all tasks without patient interface—seems to obscure the relevance of humanism. It is increasingly apparent that physicians spend a disproportionately greater amount of time with a computer screen than with a patient [19]. (For further details, see

Chap. 3.) So, while we can describe what humanism *is*, it can be harder to define what a humanistic physician *does* in a practical sense.

Attempts to describe the habits and behaviors of humanistic physicians quickly devolve into a "word salad." Humanistic physicians are empathic. They are compassionate. They treat their patients with kindness. They are curious about their patients' context and values. They approach clinical decisions with cultural humility and an alignment with patients' goals and preferences. They practice medicine in a way that values the physician-patient relationship. They view their actions not only in the curative frame of medicine but also in the frame of healing. Humanistic physicians are humble. They engage in mindfulness, self-reflection, and perspective-taking on both their technical performance and the nature of their interactions with patients. They are self-aware [3, 5, 20]. (For further details, see Chap. 5.)

In efforts to promote and sustain humanism in medicine, organizations like the *Gold Foundation* for *Humanism* have developed methods to study and measure humanistic characteristics [21]. Some have pointed out that such measurement risks subjecting humanism to the reductive forces that underpin the biomedical paradigm, noting that the quantification of humanism has potential to destroy what it seeks to measure [22, 23]. Others suggest that regardless of the integrity of the measurement schemes, as in the case of other human endeavors, one will know a humanistic physician upon seeing one. Table 1.1 summarizes characteristics associated with humanistic physicians.

**Did You Know?**

*In keeping with the field of medicine, there is even a helpful mnemonic for humanism! Developed by the Gold Foundation for Humanism, I.E.C.A.R.E.S. represents the attributes of the humanistic healthcare professional: integrity, excellence, collaboration and compassion, altruism, respect and resilience, empathy, and service [24].*

**Table 1.1** Characteristics of humanistic practitioners

| | |
|---|---|
| Humble | Recognizing and cherishing the privilege that is bestowed upon physicians to engage with other humans in their most vulnerable state. Acknowledgment and acceptance of personal limitations and receptivity to input from others. |
| Professional | Striving to uphold the highest standards of professional behavior and doing what is ethical and in the best interests of the patient. |
| Curious | Possessing a genuine desire to understand the patient's context, hopes, fears, and wishes. |
| Self-reflective | Developing the capacity to critically assess one's own behaviors, beliefs, and interactions in order to better care for patients, and doing so regularly. |
| Connection-seeking | Understanding of the importance of developing a relationship with patients that transcends merely the "doctor-patient relationship" into a person-centered professional connection. |
| Purposeful | Making intentional and deliberate decisions to pursue meaningful clinical and life experiences that sustain humanistic attitudes and mitigate risk of burnout (e.g., teaching, mentoring, volunteering abroad, working with vulnerable populations, finding a "balance" between the personal and professional domains of life). |

Adapted from Chou et al. [3]

## Importance of Empathy in Medicine

Empathy is the ability to comprehend the experience of others and is considered essential to forming an effective patient-physician relationship wherein the physician is able to convey a deep understanding of the patient's situation [25–27]. This is important because patients who feel understood are more trusting of their physicians and thus, more willing to disclose concerns [27, 28]. Through this trust, physicians validate and normalize patient concerns, thereby reducing feelings of isolation, worry, and distress [27, 29, 30]. In this regard, it has been suggested that patients are more adherent to medical advice and more satisfied with their medical care when they perceive empathy from physicians [27, 31]. Clinically, physician empathy has been associated with fewer disease complications in patients

**Key Points**

- Sympathy refers to understanding another's feelings of sadness or loss.
- Empathy is a deeper experience than sympathy, referring to the ability to share emotionally in the experiences of another person, to be able to identify with them and put oneself in their shoes. Empathy involves coming alongside and facing the same direction together with another.
- Compassion goes beyond empathy to include the presence of a reaction to suffering with intent to relieve it [36–39]. Compassion and its importance will be explored further in Chap. 15.

with diabetes mellitus, significantly shorter and less severe episodes of the common cold, and with a more robust immune response [32–34]. Despite these benefits, empathy has been shown to decline during medical training [27, 35]. The decline in empathy has been attributed to a number of factors which will be considered in this chapter.

## Patient-Centered and Person-Centered Care

Patient-centered and person-centered care are key components of a humanistic approach to medical practice and are terms often used interchangeably. Patient-centered care refers to that which "includes principles such as shared accountability, mutual respect and trust, shared decision-making, communication, advocacy, access to care, avoidance of unnecessary tests, and alignment of health facilities and services with patient needs" [40]. Both terms involve moving beyond a solely biomedical model toward a more holistic approach, focusing care toward the patient. This includes a broad understanding of and respect for patients' social context

(culture, race, spirituality, sexuality, relationships, and resources), ideas, values and goals related to health, wellness, and medical care. Some have suggested that the term "person-centered care" moves the "locus of power" from the physician to the patient for defining what constitutes care, and more clearly emphasizes patients' resources and problems as *they* experience them, not only as health professionals define them [40]. From the lens of a humanistic approach to medicine, both concepts highlight the importance of knowing and valuing the patient, their story, and their preferences.

**Skill-Building Exercise: The Humanistic Physician**

Consider a humanistic physician with whom you have worked.

What qualities and behaviors did they demonstrate to give you that impression?

Consider your own experience in caring for patients and identify a time when you approached your work in a humanistic manner.

What particular aspects of your care demonstrated humanism in this situation?

## Importance of Positive Role Models

Role modeling is often considered the most effective way to learn about the humanistic aspects of medicine [27]. One way to optimize the learning environment and perhaps mitigate a decline in empathy is to seek out positive role models who exhibit humanism in medicine. Students and residents identify most closely with faculty who are not only clinically competent, but who also show passion for their work [41]. A study of surgical residents' perceptions of humanistic faculty found that those who exemplified humanism showed "humility, responsibility, and a desire to live up to a high standard of professional behav-

ior" [20]. The shared habits important to sustaining these attitudes were "self-reflection, finding deep connections with patients, maintaining personal and professional relationships, having fun at work, and paying forward to surgical trainees" [20]. A prior study with internal medicine residents identified similar attitudes and habits [3]. Both studies highlight the importance of positive role models in the development of residents as humanistic practitioners.

Faculty who model empathy in the context of patient care are viewed as inspirational, thus encouraging students to develop empathic skills themselves [42]. For example, residents adopt empathic phrases from their preceptors and use them in subsequent encounters to enact their moral empathy [27]. Moreover, feedback provided by positive role models has a greater impact when the resident perceives the supervisor as being supportive and having their best interests in mind [41].

**Did You Know?**

***Moral empathy*** *is the "inner motivation to accept patients unconditionally, commit to understanding patients, and help patients achieve their needs" [27, 43].*

In the natural transition from textbook learning to engaging with patients, the physician in training needs support in understanding their moral and ethical responsibilities. It is ultimately the responsibility of supervising physicians to be proactive in initiating moral dialogue in the clinical setting [44]. Medical training programs need to provide robust faculty development for their attending physicians. Faculty development must be aimed at highlighting the importance of modeling humanistic care, as well as learning the skills to guide trainees through moral and ethical discussions that they will encounter in practice. Finally, it is the shared responsibility of residents to seek out faculty who emulate moral, empathic, and compassionate care. These and other educational strategies to support humanism in medicine will be explored further in this book. (See Chap. 16.)

## Moral Development and Professional Identify Formation

### Theoretical Framework for Moral Development

Kohlberg describes the sequential stages of moral development from childhood through to adulthood, comprised of three general levels that each represent a fundamental shift in an individual's thinking process and moral perspective-taking: preconventional, conventional, and postconventional [41, 45–47] (See Fig. 1.2). Young children in the preconventional stage can determine right from wrong by avoiding punishment but are unable to generalize this learning to other situations. Later childhood and adolescence fall under the conventional stage wherein individuals can generalize learning and begin to develop a sense of self. At this stage, actions are deemed correct if they are approved by individuals they consider significant, such as parents, teachers, or friends. Receiving approval and demonstrating loyalty mark the beginning of this stage; advancing to higher levels of the conventional stage requires a deeper understanding of abstract concepts, such as roles, sense of duty, and societal norms. By late adolescence

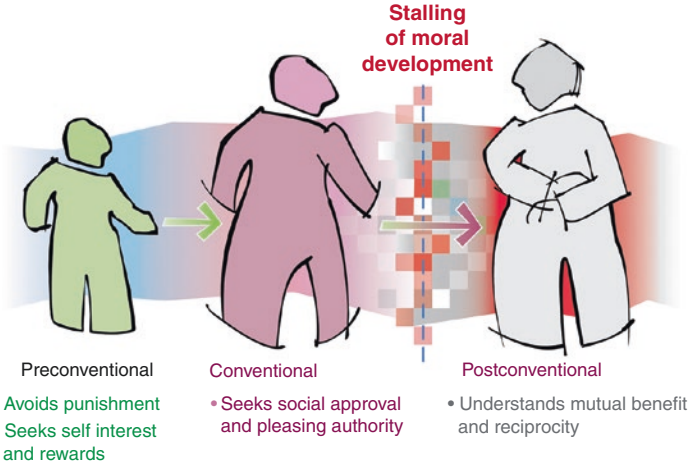


**Fig. 1.2** Three levels of moral development

and early adulthood, moral development shifts toward the post-conventional stage. In this stage, individuals define moral principles that guide their behavior beyond both the self and rules of society [41]. Moral development is a lifelong process that begins long before entry into medical school; however, upon entering medical training, the commitment and motivation for moral and ethical development is imperative.

Four distinct competencies have been recognized as key elements of moral development and functioning, as outlined in the "Four-Components Model of Morality" [48]. These competencies are as follows:

(i) *Moral sensitivity:* "the capacity to interpret ambiguous clues in real-life settings" [48].
(ii) *Moral judgement:* "the capacity to analyze moral issues and provide justifications for decisions" [48].
(iii) *Moral motivation:* "the capacity to internalize and give priority to professional values and commitment" [48].
(iv) *Moral implementation*: "the capacity for empathic interaction and problem solving" [48].

Please refer to Fig. 1.3 for an illustration of this model.

**Did You Know?**

- *Morals are "a person's standards of behavior or beliefs concerning what is and is not acceptable for them to do" [Moral. (2019). In Oxford Online Dictionary. lexico.com/definition/moral]. Morals are personal, helping one to internally determine what is right and wrong. Morals inform ethics.*
- *Ethics are an external set of expectations or rules for behavior and are context-dependent [49].*
- *A physician may demonstrate behavior that is ethical, but that goes against their own morals. Alternatively, a physician may act in keeping with their own moral standards, but in doing so, go against the ethical expectations of an established code of conduct.*

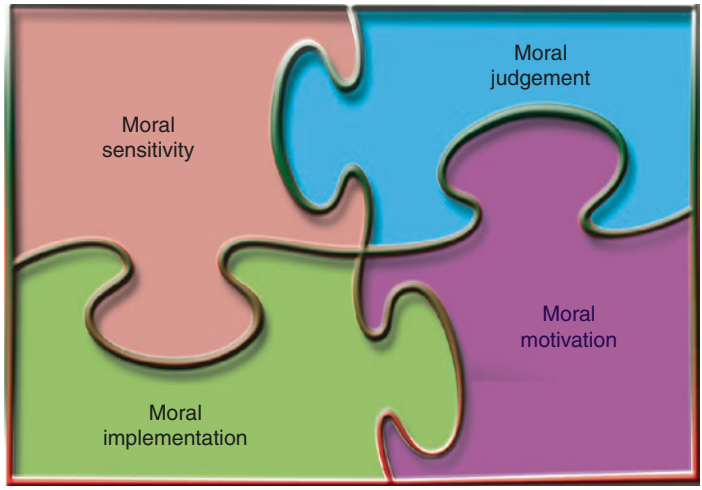


**Fig. 1.3** Four-component model of morality

Regarding the previous *Did you know?* section discussing morals and ethics, for example, a physician might not personally agree with pregnancy termination for a number of reasons, such as genetic anomalies, but will provide prenatal screening and subsequent referral for pregnancy termination when requested by a patient, as expected by their medical regulating college.

Alternatively, prior to the legalization of medical assistance in dying in some countries, some healthcare providers have chosen to hasten death for terminally suffering patients upon request, even though it was against the current ethical and legal codes of their profession and country.

It is obviously much less stressful to function as a physician when moral and ethical expectations are aligned, although we know that in the complexity of real-world medical practice, they sometimes are not!

**Key Points**

- Moral development occurs over one's lifetime, progressing along a continuum defined by three stages: preconventional, conventional, and postconventional [41, 45–47].
- Moral functioning relies on four key competencies which include: moral sensitivity, moral judgement, moral motivation, and moral implementation/character and competence [48].

**Skill-Building Exercise: Moral Development**

Take a moment to consider your own moral development to this point in your medical training.

- What personal moral beliefs guide your own decisions and behaviors as a physician?
- Consider a recent patient care experience in which you were able to live out your morals in your work as a physician. What made this possible? How did it feel?
- Have you been involved in a patient care experience in which your personal morals were challenged? How did you manage the situation? How did it feel?

## Professional Identify Formation

In the context of medicine and clinical practice, a well-developed sense of moral judgement is both important and necessary for the challenging professional practice of "doctoring." There is an expectation that physicians, as professionals, reflect on the moral

basis of their actions and place the best interests of patients before themselves. This ability is realized over time as one develops their professional identity as a physician.

Professional identity formation is influenced by ongoing moral development, and is defined as "a process by which [trainees] incorporate professional values, aspirations, and actions into their identity and develop an increasingly complex understanding of what it means to be a professional" [48]. As one transitions from medical school to residency to independent medical practice, the integration of this growing professional understanding with one's own moral construct supports the evolution of an increasingly complex professional identity. Learning about medical professionalism is a fundamental component of medical education; the goal is to ensure that medial trainees understand the nature of the profession, its obligations, and the importance of internalizing its value system. The ultimate outcome of professional identity formation is a "fully integrated moral self," "one whose personal and professional values are fully integrated and consistently applied" [50]. Equipped with a well-established professional identity, one is more likely to experience success as a humanistic and resilient healthcare professional.

**Key Points**

- Professional identity formation is "a process by which [trainees] incorporate professional values, aspirations, and actions into their identity and develop an increasingly complex understanding of what it means to be a professional" [50].
- The successful outcome of professional identity formation is a "fully integrated moral self" in which one's "personal and professional values are fully integrated and consistently applied" [50].

## Stalling of Moral Development During Medical Training

Moral development can be either positively or negatively affected during medical training. Medical residents often enter training in early adulthood when moral development typically progresses from the conventional stage wherein behaviors are based on the norms and values of those around them, to the post-conventional stage in which individuals identify and attempt to live by their own personal values. However, a number of studies have shown that moral development in medical students remains relatively stagnant [41, 46, 51–55]. It has been suggested that the lack of ongoing moral development in medical trainees is attributable to *moral distress* that arises in part due to hierarchical pressures (i.e., the hidden curriculum) of medical training [41, 52, 54].

**Did You Know?**

*The hidden curriculum is defined as "a set of influences that function at the level of organizational structure and culture," and is sometimes also referred to as the "null curriculum," "informal curriculum," or "silent curriculum." The hidden curriculum is learned implicitly (without awareness), as opposed to from explicit teaching as part of the formal curriculum [56].*

The hidden curriculum is a powerful socialization process whereby the trainee experiences a disconnect between what they have been taught (i.e., formal or delivered curriculum) and what they experience or observe of their attending's behavior [56]. Pressures within the hidden curriculum may hinder moral development by forcing residents to think and behave within a set of imposed rules and implicit expectations instead of acting in accordance with their own moral judgments and in patients' best interests. Moral distress is defined as "the negative feelings that arise when one knows the morally correct

thing to do but cannot act because of constraints or hierarchies" [52]. It is experienced by medical trainees when they witness disrespectful behaviors or actions that could negatively impact patient care within a hierarchy of medical training in which they have the least amount of perceived power [53]. If prolonged and pervasive, moral distress can be an important contributor to burnout, low career satisfaction, and erosion of professionalism [51].

## Decline in Empathy in Medical Trainees

The majority of individuals enter medical school with an innate empathic capacity [27]. However, events that occur during medical training can either nurture or erode this capacity—unfortunately, it is often the latter [27, 35]. Similar to moral development, empathy also declines from distress brought on by the hidden curriculum in medical training [57]. Additionally, the following have all been reported to contribute to empathic decline: poor role modeling by mentors, mistreatment by superiors, insufficient social supports, high workload, limited direct patient interactions, challenging realities of patient care (e.g., unpleasant patients, malpractice issues, insurance regulations, limited autonomy due to hospital guidelines), hostile learning environment, pressures on time, fear and occurrence of medical error, lack of sleep, and an idealized view of medicine from various portrayals in the media and elsewhere [27, 35, 57, 58].

**Skill-Building Exercise: Moral Distress**

Think of a time when you experienced moral distress during your medical training.

- What happened in this situation that caused you to feel moral distress?
- What do you think should have ideally happened in this situation?

- What were the factors that prevented this more ideal experience?
- Are there ways you could think of improving similar situations in the future to eliminate or mitigate moral distress?

## Humanism Barriers and Enablers

### Barriers to Humanism in Residency

Most *undergraduate* medical schools are integrating humanistic teachings into the formal curriculum as a way to counterbalance the scientific domain. However, few *postgraduate* training programs carry this course of study forward, leaving residents to absorb the values and messages of the "hidden curriculum" on their own. Humanistic lessons learned in the pre-clerkship years are sometimes set aside as one advances up the hierarchy and becomes gradually unshielded from the harsh realities of modern healthcare. For example, a resident may be willing to experience the hazard of the open-ended question in a 10-minute appointment slot just a few times before they learn to curb that practice in favor of more directive interviewing.

The block-based residency rotation schedule can interfere with continuity of care and residents' development of longitudinal patient relationships [59]. Although strict work hour restrictions were introduced as a means of addressing the excessive workload of residency, they proved unpopular among some resident groups because of their impact on relational care [60]. For example, surgical residents are often sent home post-call rather than operating on the patients they admitted and cared for overnight. Systemic factors such as these can contribute to a decline in humanistic qualities in resident physicians. (For further details on the importance of sleep, see Chap. 13.)

As discussed earlier in this chapter, residency is an important time for professional identity formation in physicians. In relation

to this process, there are distinct challenges inherent to the role of the resident that make sustaining humanism difficult. First, residents must learn to self-negotiate appropriate professional boundaries. They must find a workable compromise between an empathic emotional investment in patients' lives, while remaining professional and functional in the face of pain and suffering. Failure to do so risks emotional distress and burnout on the one hand, and failure to connect with patients and find fulfillment in one's chosen career on the other hand [61].

Second, residents may struggle to identify and discriminate between performative and authentic aspects of humanism. For example, an empathic approach is often required as a "check box" in simulated scenarios that is easily fulfilled by a simple, rehearsed statement such as, "I'm sorry to hear that" [62]. In real clinical settings, if residents are not able to find the balance between authentic empathy and appropriate professional boundaries, they risk substituting the performative version for the authentic. Recognition as a "humanistic" resident can subsequently drive a pursuit of secondary gain such as esteem among superiors and career advancement [22]. This can easily become another contributor to burnout for residents and undermine the intrinsic value of an authentic humanistic approach [62].

Third, as young leaders of a healthcare team, residents must also manage the tension between empathy and authoritativeness. To engender confidence as team leaders, residents must at times trust their own experience, expertise, and intuition over that of the team, and even the patient, to best guide care [63]. To appear indecisive or uncertain in front of a patient is to risk them asking to see the "real doctor." As a compensatory technique, residents can find themselves failing to properly value input from patients or junior learners, or attending to the relational components of patient care and team function. Fear is also a powerful motivator in residency. The on-call resident alone in the hospital at 3:00 AM is primarily concerned with making correct clinical judgments and decisions in a timely manner so as to avoid negative patient outcomes and medical errors; this can overwhelm the capacity to approach patients in a humanistic way.

On a personal level, the demands of residency are well documented. Residency usually takes place concurrently with many

other important life events and decisions. Residents are often required to relocate far away from family and friends through the algorithmic residency matching process at a time when many of their peers are settling into their adult lives, partnering, buying a home, establishing financial independence, and having children. Residents work long hours, have little control over their schedules, and must incorporate research, self-study, and other career demands outside of the typical 9–5 work schedule, leaving them with less time and energy for nurturing their own needs [64]. They may also be separated from their previously established supports and humanizing pursuits, requiring the development of new connections.

Finally, the relative stakes of failure in the scientific realm are prioritized over humanistic domains. Licensing exams, in-training exams, objective structured clinical examinations (OSCEs), morning rounds, and "pimping sessions" (a teaching technique involving public interrogation of a trainee) are all opportunities to be exposed with a deficient fund of knowledge. By contrast, the humanistic qualities of physicians can be much harder to quantify and rank. There is often no supervisor observing a trainee's interviewing skills, empathic approach, and curiosity toward the patient's context and values. While failure to master the humanistic domain makes one a poor physician, failure in the scientific domain makes for failed licensing exams, remediation contracts, poor regard among colleagues, and other badges of dishonor. Failure in the scientific domain contributes missed diagnoses and avoidable morbidity, whereas failure in the humanistic domain contributes to "mere" patient dissatisfaction.

Table 1.2 lists common barriers to humanism encountered during medical training. These issues will be further explored in Chaps. 3 and 17.

## Systemic Barriers to Humanism in Medicine

At times in the practice of medicine, the concept of work-life balance feels so elusive that it becomes more aptly termed "work-work balance" [3]. The demands of medical training and practice can be so overwhelming, compelling, and pervasive that work

**Table 1.2** Barriers to humanism in medical training

| | |
|---|---|
| **Systemic factors** | |
| Financial | The focus on clinical productivity, efficiency, and performance metrics leads to decreasing time spent face to face with patients. |
| Limited continuity of care | An increasing number of specialized clinics, alternate care providers, organizational fragmentation, disjointed and unintegrated technological systems often challenge communication between healthcare silos and the longitudinal patient-physician relationship. |
| Technological advancement | Reliance on technological systems and increasing documentation requirements has led to a decline in meaningful face-to-face interaction between physicians and patients. |
| Specialization | Decreasing reliance on generalist care promotes disease-specific care rather than person-centered care. |
| **Residency-specific factors** | |
| Personal | Financial debt, uncertain employment prospects, and geographical distance from support networks contribute to high rates of emotional distress. |
| Workload | Demanding work hours and workload contribute to professional and personal burnout which leads to feelings of depersonalization and inhibits the formation of therapeutic relationships with patients. |
| Professional identity formation | The hidden curriculum of medical culture is often at odds with the values of humanistic care. |
| Incentives | The pressing priorities of exams, performance reviews, and program and certification requirements have potential to distract from resident focus on developing a humanistic approach to the practice of medicine. |

invades home life and personal time to increasing degrees. Chapters 3, 8, and 17 will further explore various aspects of this shift toward "perpetual work-mode," along with its link to technological advances in medical practice.

The changing landscape of medicine has also had a major impact on day-to-day practice and the way physicians interact

with patients and colleagues. One author identified overemphasis of biomedical and technical models of care over psychosocial and relational aspects, as well as pressure to compete with others and impress preceptors as additional factors eroding empathy [65]. Lehman and colleagues insightfully point out that "technology need not hamper the sacred space of the patient-physician relationship" [54]. Physicians are taught the importance of evidence-based medicine which attempts to describe people, treatments, and investigations through data. Such evidence is necessary but insufficient in the care of patients and in the maintenance of physician resilience. A similar philosophy of care pertains to the use of technology in medicine. Rapidly advancing technology is extremely important in medical care, but there have also been unintended consequences for patients and their caregivers. Studies have shown that internal medicine residents spend as little at 9–12% of their time with patients and 40% of their time in front of the computer reviewing results, ordering investigations, and charting [66]. The impact of technology on humanism and physician wellness will be explored further in Chap. 3.

Additionally, more time is now spent with the team "rounding" on the computer screen and less time rounding with the patient—who should be considered the most important member of the team [54]. Physicians are spending 25% less time doing bedside teaching which results in the loss of important role modeling opportunities. It is at the bedside where students and residents learn from their teachers about therapeutic relationships, communication, clinical skills, and empathy, all of which are foundational to patient-centered care [67]. As McGee writes, "when learners experience bedside teaching, they tend to prefer such rounds for future instruction, commenting that bedside rounds provide them their opportunity to see teachers interact with patients, learn physical diagnosis, and reinforce the perspective that patients are not abstract diseases or hosts but instead unique persons" [67].

Finally, as medicine becomes increasingly sub-specialized in response to the breakneck pace of evolving healthcare discovery, coupled with increasing expectations in terms of deliverables from healthcare providers and the healthcare system, the essential prac-

tice of "generalism" is threatened. Generalist specialities have the ability to apply a more holistic approach to patient care including an understanding of psychosocial context over time, which both benefits from and promotes humanistic practice. Medicine's trend toward increasing specialization and narrowing fields of practice fosters discomfort with uncertainty and potential disdain for "not knowing." Medical trainees often experience distress with and disregard for clinical uncertainty through the hidden curriculum, if not overtly. Unfortunately, this can make it even more challenging for trainees to develop the skills and ability to successfully approach and manage complex multi-morbidity, undifferentiated, and at times, inexplicable patient concerns. It also risks fragmentation of care, the creation of "silos" of patient care, and diminished continuity of care. All of these can impair patients' and providers' experiences of humanism in the healthcare system itself, regardless of the approach of individuals within the system.

## Case Study II

Fatima, a first-year medical resident, has just started her emergency medicine rotation and is having a busy shift in the ED. She has not worked previously with her current attending physician.

A young female comes into the ED alone and tearful. The patient is settled into a room and determined by nursing to have stable vital signs, following which Fatima begins her assessment. The patient is pregnant at 10 weeks gestational age, a first pregnancy that was desired and took over a year to conceive. Today the patient started to experience cramping, followed by spotting. Over the past several hours, the cramping has become more severe and the bleeding much heavier. The patient is scared and sad. The patient's husband is overseas visiting family and she has been unable to reach him.

Fatima is concerned about the degree of ongoing bleeding. She prepares the patient for a speculum exam, and is able to identify a large blood clot at the cervical os that she gently removes with

ringed forceps. It is a difficult exam due to the patient's distress and the amount of bleeding. While she is in the middle of the examination and providing ongoing emotional support to the patient, her attending appears suddenly in the patient room. He is visibly upset at how long she has been taking for this patient assessment, and without acknowledging the patient, firmly instructs her to hurry up and finish with this case so that she can move on with the lineup of patients accumulating in the waiting room.

***Question 1.*** **What barriers to humanistic practice contributed to this upsetting situation faced by Fatima?**

A. **Inadequate time for workload demands**
B. **Lack of role modeling of humanism by preceptor**
C. **Resident lack of familiarity with ED process and preceptor expectations**
D. **All of the above**

**Answer: D ✓**

*Working in the ED can be challenging for countless reasons: acuity, volume, strained resources (e.g., rooms, staffing, imaging availability), demands and emotions of patients and family and providers (A). Lack of familiarity with a new department and its processes, the healthcare team members, and rotation expectations are common challenges for medical trainees like Fatima (C). Proper orientation and supervisor support are especially important in high stress and high acuity rotations. In this difficult encounter with her supervisor, Fatima was approaching her care of the patient in a humanistic manner, which was not understood, acknowledged, or valued by her supervisor (B). It is likely that not only Fatima, but the patient as well, were negatively impacted to some degree by this interaction. Barriers to humanism in this situation included: (A) time pressures due to patient volume in the ED, (B) differing priorities between Fatima and her supervisor regarding triage of patients and a humanistic approach to care,*

*and (C) lack of familiarity between Fatima and her supervisor such that trust and clarity of expectations and process had not been well established. Orientation, team relationship-building, and open conversation about patient care and prioritization would all be helpful in mitigating dehumanizing occurrences such as this.*

***Question 2.*** **What humanistic approaches to patient care and resident education could the preceptor have role modeled for Fatima, in a more optimal encounter?**

A. **Providing feedback to the resident in a private location**
B. **Acknowledging the patient upon entering the room**
C. **Taking time to understand and validate the patient's experience**
D. **Offering to accompany or assist the resident during the procedure**
E. **All of the above**

**Answer: E ✓**

*There are various ways in which clinical supervisors can role model humanism (or not!) in both patient care and in teaching. Fatima's patient could have benefited emotionally from acknowledgment of her person (B) and her concerns (C) by the staff physician, but instead may have felt dismissed and disrespected. A humanistic approach is more likely to enhance this patient's overall satisfaction with the visit and her follow through with medical recommendations, even as she confronts the grief and fear of her pregnancy loss. A more humanistic approach to teaching could have included a debrief of the case with genuine interest in Fatima's assessment and approach to the patient's care, and provision of feedback in a private location as opposed to in front of the patient (A). Fatima might also have benefited from the support of her supervisor during the challenging examination (D), an opportunity for direct observation, teaching, and enhanced learning. Humanism has the potential to not only benefit patients, but learners and practitioners as well!*

## Supporting the Development of the Humanistic Resident

Residency training is a stressful time for many residents. Developing healthy adaptive methods to process the complex demands and challenging experiences of residency should be an essential component of training. Programs that support the development of a positive professional identity and personal awareness of the emotional labor of caring are more likely to foster the development of humanistic practitioners. Fostering moral development and empathy during medical training by addressing the systemic elements that contribute to its decline is of paramount importance. Failing to do so risks burnout, compassion fatigue, and overall dissatisfaction among physicians. But as residents, what can one do?

Being in healthcare, residents are generally aware of the importance of self-care (e.g., eating right, getting enough sleep, and exercising) and of maintaining work-life integration as a way to protect against the negative impacts of training. While self-care is important, it is not enough. This type of lifestyle advice falls short of fully addressing the real-life pressures of medical training and can be difficult to achieve amidst the heavy demands of clinical work, busy call schedules, and large patient loads. Modern medicine and medical education are starting to incorporate the arts and humanities as one measure to help protect against burnout and to promote compassion and humanism in medicine. Although this chapter will introduce such ideas, they will be elaborated further in the chapters of Part III section, *Adaptive Strategies to Promote Physician Wellness*.

## Role of Arts and Humanities in Supporting Humanism in Medicine

The arts and humanities in medicine and medical education have been gaining momentum and are now widespread. Residents and physicians can now access the arts and humanities in medicine

through a number of journals, courses, electives, programs, and research groups all devoted to medical humanities. Importantly, medical humanities is now more commonly referred to as *health humanities*, as this term is more inclusive of other healthcare professionals; it is defined as an "integrated, interdisciplinary, philosophical approach to recording and interpreting human experience of illness, disability and medical interventions" [68]. The incorporation of health humanities has gained popularity in medical education as a means to address dwindling empathy, increasing moral distress, and burnout. As Skorzewska and Peterkin have pointed out, the health humanities are concerned with two important areas of healthcare: first, humanizing medicine by fostering a deeper understanding of the impact of illness on the patient and those who care for them; second, providing a unique space for critical and self-reflection [69]. By creating the necessary space for such reflection, health humanities hold the promise of fostering resilience and meaning in the work of being a physician.

**Did You Know?**

*"The Art of Seeing™" is a visual literacy program that enhances observational skills, fosters empathic development, and promotes self-care for healthcare providers through the facilized viewing of works of art with guidance from trained facilitators, usually in the creative space of an art gallery [70, 71].*

## Critical Reflection

Critical reflection and critical thinking are processes that help one make sense of experiences through questioning, analyzing, and evaluating. Through reflection, one can explore thoughts and experiences to gain a new and deeper understanding. The insights gained through this process can be applied to similar subsequent situations.

Critical reflection in small groups using interactive reflective writing has been shown to support professional identity formation, help learners distinguish between positive and negative role models, uncover the hidden curriculum, develop humanistic skills and attitudes, reduce stress, and foster wellness when incorporated into medical curricula [72–74]. In a study by Koo in which urology residents and fellows were asked to reflectively write about a particularly meaningful personal or professional experience during their training, the common emergent theme was that the writing helped trainees find meaning in their work [75].

What is it about reflective writing that leads to critical reflection? Reflective writing creates space to question, analyze, and evaluate one's experiences, along with the thoughts, feelings, and reactions they evoke. Learning by practice alone without reflection is unlikely to result in professional growth [41, 76]. Charon and colleagues have written extensively about the importance of reading literature and reflectively writing about the experience of caring for patients as a means to promote critical reflection and improve patient care [77]. Charon proposes that narrative training in the clinical setting "can introduce students to ways of knowing that allow them to recognize ethical dilemmas, to regard patients holistically, and to feel the emotions of compassion toward patients and themselves" [77]. Furthermore, narrative training can "increase curiosity, strengthen the use of imagination, and develop the creative powers of the students to represent what is seen so as to deepen his or her very perception of that which is before the eyes" [77].

In a busy clinical setting, the tendency is to look for a quick overview or the "bottom-line" when reading medical information. Reading literature and writing reflections cause one to slow down in ways that are unfamiliar to many in the typical harried practice of medicine. When a physician *does* have time to relax and read for leisure, it might well be spent on a mobile device scrolling social media. However, literature can be a rich source of knowledge about the human experience of illness. In an article entitled "Slow Medical Education," Wear and colleagues advocate for thoughtful placement of literature in medical curricula as a means

of helping students understand patients' illness experiences and fostering professional identity formation through a deeper understanding of these experiences [78]. Writing with the intention of reflecting requires more engagement and exploration, a commitment to ideas, sometimes a reliving of the past, and time to reflect on how things could be different in the future [77].

Are there alternative settings to a hospital or clinic for physicians to engage in reflective practice? As it turns out, the answer is yes. There are now a number of health humanities initiatives across Canada and the USA which have incorporated the art gallery and museum as a unique space for medical practitioners to develop skills in reflective practice. There is mounting evidence for the educational value of taking learners into the art gallery [70, 71, 79, 80]. Many of these studies initially focused on the impact of observing art on improving observational skills and diagnostic acumen, as well increasing acuity to nonverbal cues [79, 81]. It turns out that improving visual literacy impacts more than just observational skills. Basic visual literacy techniques can improve perception, critical thinking, communication, empathy, compassion, self-care, and wellness when augmented by facilitated observation, discussion, art creation, and narrative reflective writing [70, 71]. There are now over 40 undergraduate and 11 postgraduate programs in Canada and the USA that have incorporated visual arts into their curricula [82]. These highly experiential programs, which take place in the imaginative space of the art gallery, promote "learning to look and then look again," contribute to professional identity formation, and nourish the qualities necessary to practice humanistic medicine [70, 71].

## Mindfulness Practice

We know that empathy declines during medical training, while rates of burnout and distress increase [27]. These trends are of particular concern and importance given that heightened empathy and decreased distress among medical providers have both been associated with better health outcomes for patients and an improved sense of well-being for physicians [27].

In response, a number of medical schools around the world have started to incorporate mindfulness-based interventions (MBIs) into their programs as an effective strategy to manage and decrease stress/distress associated with medical training [83–86]. A 2018 systematic review of mindfulness interventions in medical education by Daya and Hearn found that MBIs were effective in managing and preventing stress and depression in learners [83]. MBIs have also been shown to positively influence empathy and reduce the risk of compassion fatigue and burnout [86–89].

Mindfulness training has been associated with the development of attributes such as curiosity, openness, acceptance, and an ability to focus on the present moment [86]. Thus, training in mindfulness practices can be an effective way to develop the skills necessary to promote more effective and rewarding doctor-patient relationships. The mindful medical practitioner is more likely to engage in attentive listening, develop a deeper understanding of the patient's illness experience, and respond with increased compassion and empathy [86].

Mindfulness can also help combat the negative impact of stressors associated with medical training by fostering self-awareness regarding the types of ruminations that often precede the onset of depression, and promoting the ability to identify and adapt to intense emotions [83, 84]. The mindful physician is more likely make sound judgments during stressful situations and is more apt to engage in self-care activities [85]. (For further details on mindful techniques, see Chap. 15.)

**Did You Know?**

- ***Mindfulness*** *can be described as "non-judgemental attention to experiences of the present moment, including emotions, cognitions, and bodily sensations, as well as external stimuli" [86].*
- ***Mindfulness practice*** *is defined as "systematic training and practice (of mindfulness), primarily through meditation" [83].*

**Skill-Building Exercise: Pause and Reflect**

1. In what situations do you find it most challenging to employ a humanistic approach in your practice of medicine?
2. In your development as a humanistic medical doctor, what have you found helpful for nurturing humanism in practice?
3. What new experiences and strategies are you interested in exploring to further develop and maintain your humanism as a medical doctor?

Strategies to promote humanism in residency education will be discussed further in Chap. 16.

## Impact of Humanistic Medical Practice

### Benefits of Humanism in Medical Practice

As has been noted previously in this chapter, physicians who practice medicine with a humanistic approach experience enhanced job satisfaction [3, 20]. As human beings are wired with a need for emotional connection, it is through relationships that physicians find meaning in their work and lives.

Interestingly, there has been some discussion about the association between a humanistic approach to medical care and the risk of provider burnout [90]. While humanistic physicians tend to have greater job satisfaction, these very physicians may also have a tendency toward altruism, placing the needs of patients and others above their own. If taken to a degree that risks self-neglect, over time this could progress toward compassion fatigue and burnout [90]. It is essential that humanistic physicians remain attentive to their self-care needs to ensure that they preserve their own well-being, which subsequently enables them to provide humanistic care to others [3, 20]. The concept of self-compassion

will be explored more fully in Chaps. 2 and 15, while compassion fatigue and burnout will be addressed in Chaps. 10 and Chap. 18.

Encouragingly, there is additional literature to suggest that a humanistic approach to the practice of medicine can reduce the risk of burnout and enhance physician resilience, as discussed earlier in this chapter [3, 27]. This may be attributable to the ability of humanistic physicians to forge meaningful connections with patients and coworkers, thereby achieving enhanced career satisfaction overall. It may also be that humanistic physicians are more likely to prioritize opportunities for self-care and healthy pursuits beyond medical practice [3].

**Key Point**

A humanistic approach to medicine has benefits for:

- *Patients*—improved satisfaction with care, increased follow-through on healthcare recommendations, improved health outcomes
- *Physicians*—enhanced career satisfaction, decreased risk of burnout, and increased resilience
- *Healthcare teams*—improved communication and effectiveness

## Case Study III

Jorge is a third-year general surgery resident who attends a walk-in clinic one Saturday morning. He is experiencing a personal health crisis related to a recent breakup with his long-term boyfriend. He has been stressed and busy on surgical rotation at the hospital. He had been aware of strain in the relationship, partly due to limited time and energy to invest. But he had not anticipated the breakup, having assumed that circumstances would

improve on upcoming rotations, and even more so upon completion of training.

Jorge is sad and a bit tearful. He is unable to sleep, eat, and concentrate. He has withdrawn socially from colleagues and friends, preferring time alone. He wants to explore medical options to aid sleep as he is finding it difficult to function at work. He also recognizes his need for professional counseling support.

The healthcare provider at the walk-in clinic seems distracted by issues with the computer in the examination room, making little eye contact. Without much inquiry or discussion, he hands Jorge a computer tablet and asks him to complete two electronic questionnaires. One is to assess Jorge's mood symptoms and the other is to assess his anxiety symptoms. Jorge mentions that he is dealing with a situational crisis, and does not feel such questionnaires are applicable to his situation which is acute and has been precipitated by the breakup. The healthcare provider does not appear interested in this perspective and remains firm on the importance of the instruments for assessment. Jorge feels somewhat misunderstood and disconnected from the provider. But given his desire to feel better and return as soon as possible to his previous level of function, he sighs and completes the PHQ-9 and GAD-7.

There is very limited conversation following completion of the questionnaires, with the healthcare provider relying primarily on the electronic information and test scores. Jorge feels further shut down, and although he leaves with a short-term medication trial to help him sleep and with a list of local counselors, he actually feels somewhat worse than he did prior to the medical appointment.

***Question 1.*** **What are the barriers to humanism experienced by Jorge in this medical encounter?**

A. **Limited interest in and exploration of the patient's story**
B. **Over-reliance on a reductive checklist**

C. **Dismissal of patient concerns**
D. **All of the above**

**Answer: D ✓**
*The healthcare provider at the walk-in clinic employed a more biomedical approach to care than a humanistic approach to care, resulting in Jorge leaving the appointment feeling overall less well emotionally than he did prior to the visit. Jorge was somewhat dissatisfied with his medical care, even though he was provided with a sleep medication and a recommendation for counseling, which were his practical goals for the visit. The healthcare provider's limited conversation and exploration of Jorge's situation (A), along with the dismissal of his concern about the relevance of a reductive checklist-based approach to diagnosis (C), and reliance on test scores as opposed to Jorge's experience and story to help guide assessment and management (B), contributed to his feelings of not being heard or understood.*

***Question 2.*** **What benefits could Jorge experience with a more humanistic approach to his medical care?**

A. **Increased satisfaction with medical care**
B. **Increased follow through on care plan recommendations**
C. **Improved sense of well-being**
D. **All of the above**

**Answer: D ✓**
*Had Jorge's medical care provider been able to show more interest in who he is and what he is experiencing, it is likely that he would have left the encounter feeling more satisfied with the visit (A) and with an improved overall sense of wholeness and well-being (C). It is also more likely that he would follow through on recommendations for care related to sleep, counseling support, and other aspects of self-care.*

**Key Takeaways**

- At its best, the practice of medicine is a humanistic service to support the overall health and wellness of individuals and society.
- Medicine requires expert knowledge and skill in both biomedical and humanistic approaches to care such that scientific expertise is applied thoughtfully in the lives of patients and their communities with the goal of compassionate care and healing.
- Humanism is an approach to medical care that values the connection between doctor and patient, considers the patient in their broader social context, respects patients' goals and values, and expresses empathy and compassion.
- Humanistic medicine is associated with improved satisfaction and health outcomes for patients and improved career satisfaction for physicians.
- Residents and physicians face many barriers to humanism in medical practice, including time constraints, resource shortages, the role of technology, the hidden curriculum, lack of continuity with patients, hierarchical systems, fatigue, and burnout.
- Moral development, professional identity formation, and empathy are important processes for medical trainees that can be negatively impacted during residency and medical practice.
- Positive role modeling of humanistic medicine and inclusion of the arts and humanities in medical curricula (e.g., reading literature, reflective practice, and art observation) support the development and sustenance of humanistic physicians.
- Many resources are available to support medical trainees in their development and maintenance of humanism and resiliency, while also helping to mitigate the stress of residency.
- Humanism in medical practice is an important contributor to physician wellness and the prevention of burnout.

## Additional Resources

Selected resources about humanism in medicine are illustrated in Table 1.3.

**Table 1.3** Selected resources for humanism in medicine

| **Online resources** | **Web link** |
|---|---|
| NYU LitMed Database | http://medhum.med.nyu.edu |
| History of Medicine & Medical Humanities | https://medhumanities.mcmaster.ca |
| Bellevue Literary Review | https://blr.med.nyu.edu |
| The Arnold P. Gold Foundation | https://www.gold-foundation.org |
| Center for Digital Health Humanities | http://www.centerfordigitalhealthhumanities.com/en/ |
| Graphic Medicine | https://www.graphicmedicine.org |
| Canadian Association for Health Humanities | https://www.cahh.ca |
| Ars Medica: Journal of Medicine, The Arts, and Humanities | https://ars-medica.ca/index.php/journal |
| Intima: Journal of narrative medicine | http://www.theintima.org |
| Journal of Medical Humanities | https://www.springer.com/journal/10912 |
| Columbia Narrative Medicine | https://www.narrativemedicine.org |
| BMJ Journals: Medical Humanities | https://mh.bmj.com |
| MedHumChat | https://www.medhumchat.com |
| **Books** | **Brief description** |
| "In Shock: My Journey from Death to Recovery and the Redemptive Power of Hope" by Rana Awdish, St. Martin's Press; 1 edition, Oct. 24, 2017. | A insightful, compassionate, and critical look at illness from both a physician's and a patient's perspective. |

(continued)

**Table 1.3** (continued)

| | |
|---|---|
| "When Breath Becomes Air" by Paul Kalanithi, Random House; 1 edition, Jan. 12, 2016. | A powerful and inspiring, posthumously published memoir about the author's life and illness as a physician and a patient, finding hope and beauty in the face of battling terminal illness. |
| "Middlemarch" by George Eliot, Alma Classics, Franklin Square, Mar. 20, 2018. | George Eliot's masterpiece; a riveting, timeless novel published in the nineteenth century, emphasizing compassion, generosity, and self-awareness in the shaping of a single life, which transcends time and generations. |

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# 2 The Role of Self-Compassion in Health and Well-Being

Joanna Jarecki, Satyam Choudhuri, and Tara Riddell

## What Is Self-Compassion?

### Clenched Fist Exercise

In order to understand self-compassion, consider the following guided skill-building exercise to explore what self-compassion may feel like in your body.

**Skill-Building Exercise: Clenched Fist Exercise (Adapted from [1])**

Take a moment while reading this. Place both of your hands in front of you, palms facing up. Slowly begin to clench your

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fists. Continue to squeeze until your hands are tight enough to be slightly uncomfortable. As you hold your clenched fists, notice the sensations in your hands, arms, shoulders, chest, and the rest of your body. Do you feel tight? Rigid? Stressed? This is a way to relate to what it can feel like moving through life with a highly self-critical, perfectionistic lens. It is often harsh, painful, and stress-inducing.

Now release your hands and open them with palms facing up. Feel the difference in sensation in all your body parts. You may notice a sense of relief, freedom, and spaciousness. This is what it may feel like to be kinder to ourselves, less self-critical, and acknowledge that imperfection is part of the common human experience.

To finish off, place one hand over the other on your chest. Again, notice what it feels like to do this. Does it feel strange or natural? Do you notice any resistance? Try to slowly and kindly let go of any judgments you may have, and really start to notice the warmth of your hands on your chest. You may start to feel a sense of comfort. This is what self-compassion can feel like, and what this chapter aims to help the reader work toward.

## Defining Compassion

Before beginning to understand self-compassion, it is important to first define and explore the concept of compassion and the importance of compassion within medicine. Compassion may be defined as sensitivity to the pain or suffering of another, coupled with a deep desire to alleviate that suffering [2]. Compassion includes being touched by the suffering of others, offering understanding and kindness, and being moved so that one responds to another's pain [3]. After all, the Latin etymology of "compassion" means "to suffer with" [4]. Thus, compassion toward another individual involves warmth and a desire to help. Importantly, it also involves an understanding that suffering and imperfection is part of the shared human experience.

Most physicians are motivated by a deep-seated desire to help others. This is a common reason for choosing a career in medicine. Compassion is also emphasized and taught within medical training. Physicians are expected by their profession, by patients, and by regulatory bodies to provide compassionate care. Most physicians are adept at providing compassion to others. However, turning compassion toward themselves can be foreign and particularly challenging. Going back to the Clenched Fist exercise, physicians often find it easier to feel compassion toward their patients (i.e., having an open hand), but when it comes to turning that compassion toward themselves, this can be much more challenging, and they may experience a lot of resistance (i.e., a clenched fist).

## Defining Self-Compassion

Kristin Neff is widely recognized as a pioneer researcher of self-compassion. In 2003, she first operationalized the construct of self-compassion by dividing it into three components: (i) self-kindness, (ii) mindfulness, and (iii) a sense of common humanity [3]. In its most basic sense, self-compassion involves being compassionate toward oneself, or compassion that is directed *inward.*

The first component, *self-kindness*, entails being warm, compassionate, and understanding toward oneself when an individual does not live up to their own expectations or the expectations of others [3]. When one makes a mistake or fails, rather than beating oneself up, self-kindness encourages the individual to show caring toward themselves. Self-kindness therefore is in direct contrast to, and reduces, self-criticism, self-condemnation, blaming, and rumination [3].

The second component, *mindfulness,* is a modern term first derived from Buddhist and Hindu traditions. One of the more popular definitions by Jon Kabat-Zinn (founder of the Mindfulness-Based Stress Reduction (MBSR) program), is "paying attention on purpose, in the present moment, and nonjudgmentally" [5]. In the context of self-compassion, mindfulness refers to the ability to acknowledge and accept suffering while it is happening, or to "be with" suffering, while also creating sepa-

ration from and not over-identifying with thoughts and feelings associated with suffering [3]. In essence, it encourages one to acknowledge their own pain without becoming absorbed or swept away by their aversive reaction to this pain. This "makes us more willing to accept, experience, and acknowledge difficult feelings with kindness—which paradoxically helps us process and let go of them more fully" [3]. Mindfulness allows an individual to see their situation with clarity so that they may respond to it effectively. This component of self-compassion may sound simple, but in the face of suffering, many individuals do not recognize that they are suffering, thus preventing them to be able to respond appropriately. Becoming mindful of suffering, so that one can respond, is a critical first step to being able to effectively respond to challenge in a way that supports health and resilience.

The third and final component, *a sense of common humanity*, involves recognizing that suffering and personal inadequacy are part of the shared human experience, something that all individuals go through rather than being something that happens to "me" alone [3]. This recognition helps one realize that all humans are flawed and make mistakes and that pain and suffering is a natural part of life, for every human being, without exception. Therefore, to make mistakes and to suffer is completely *normal* and *natural* rather than an indication that one is "flawed" or that one's life is not happening as it is "supposed" to. Being aware of common humanity in the midst of suffering can provide a sense of interconnectedness and comfort in knowing that one is not alone.

Self-compassion teaches an individual to become an inner friend or ally to themselves, rather than an inner enemy [1]. In the face of suffering, it encourages one to ask "What do I *need* right now?" And gives permission to *act* or to respond to this need. This may be particularly relevant for physicians who are focused on meeting the needs of others, while not being aware of, or sacrificing, their own needs.

Table 2.1 outlines the three components of self-compassion (self-kindness, mindfulness, a sense of common humanity), and also pairs each component with counterparts to aid with understanding. Self-kindness can be contrasted with self-judgment, mindfulness with over-identification, and a sense of common humanity with isolation.

**Table 2.1** The three components of self-compassion [3]

| Self-compassion component | Counter-part component | Examples of self-compassion in use |
|---|---|---|
| *Self-kindness*<br>"Being warm and understanding toward ourselves when we suffer, fail, or feel inadequate" [3] | *Self-judgment*<br>"Ignoring our pain or flagellating ourselves with self-criticism when we suffer, fail, or feel inadequate" [3] | *Statements*<br>*"This mistake does not define me and is not a measure of my self-worth. Making mistakes is a part of growth and I will take the time to learn.*<br>*I have made it this far in my career by being competent and resilient. I will get through this too."* |
| *Mindfulness*<br>Holding one's negative thoughts and feelings in mindful awareness so as to not suppress or exaggerate them (i.e., "this too shall pass") [3] | *Over-identification*<br>Being caught up and swept away by our negative reactions [3] | *Statements*<br>*"I feel tightness and heaviness in my chest. I can feel my head racing. This is a natural response to a stressful event. I will not resist this feeling, but rather lean in to the experience, knowing that this too shall pass."* |
| *A Sense of common humanity*<br>Recognizing that suffering, imperfection, and personal inadequacy are something that we all go through [3] | *Isolation*<br>Thinking that suffering, imperfection, and personal inadequacy are something that happens to "me" alone [3] | *Statements*<br>*"I am not the first person, nor will I be the last, to make such a mistake. Nobody is perfect.*<br>*My peers and colleagues have likely had similar experiences; I will reach out to them for help."* |

**Skill-Building Exercise: How Self-Compassionate Are you?**

If you would like to learn how self-compassionate you are, you can complete the free self-compassion scales available online, such as the scale developed by Neff and colleagues. (See section "Additional Resources", for further information.) It is helpful to have an objective assessment of your

baseline measure of self-compassion. As you learn about self-compassion and apply the concepts in this chapter (along with self-compassion practices in Chap. 15), you can return to the scale you initially completed to gauge your progress.

**Key Points**

- Self-compassion encourages us to *mindfully* accept moments of pain and suffering, to embrace ourselves with *kindness* and care in response, and to remember that imperfection and suffering is part of the *shared human experience* [3].
- When feeling intense moments of self-criticism, rumination, and blaming, try to remember the Clenched Fist exercise and what it felt like to release your fists.

**Skill-Building Exercise: Reflection**

Imagine if you were feeling overwhelmed after a difficult clinical day. Perhaps you had to deal with an agitated, angry family member or witnessed a bad patient outcome. Perhaps systemic challenges made it difficult to get your patient the care they needed. Now imagine a friend or colleague walked into the room, sat down beside you, put their arm around you, listened to your distress, and then helped you to work out a plan or solution. What would that feel like? Now imagine if that friend or colleague were *you*. By learning *self-compassion*, you can be there to support yourself in any moment. This offers a coping mechanism, and a supportive ally, that is with you at all times.

## Self-Compassion for Skeptics

### Common Myths

People often have hesitations or misperceptions about self-compassion. If, as a reader, there are questions that are already arising in this regard, this is absolutely normal and expected. Before reviewing the evidence that supports the many benefits of self-compassion, it is important to start by addressing the myths that can prevent people from being open to considering self-compassion as something worth learning about or something that may be helpful or relevant in their own life. Below are some of the common myths and reservations that come up around the concept of self-compassion, followed by the facts.

> Self-compassion will make me lazy and unmotivated. I'm a doctor, I have to work hard to get through my training! Self-compassion would probably make me study less and skip work whenever I feel like it.

One of the most common concerns people have with self-compassion is that it will impact their motivation and ambition. This is amplified by the fact that many physicians have traditionally sought motivation through self-criticism, which is commonly reinforced within the culture of medicine. Self-criticism motivates individuals through the fear of failure and shame [6]. For many, self-criticism/the fear of failure can be a very effective source of motivation *in the short term*. The issue, however, is that too much self-criticism can undermine self-confidence and leads to a fear of failure in the long term. Self-criticism is linked to depressive vulnerability, negative rumination, anxiety, and feelings of worthlessness, shame, and guilt [7–9].

Motivation through self-compassion, on the other hand, can help us maintain our self-confidence and feel emotionally supported while working toward our goals. In a study of 222 undergraduate students, those who had higher levels of

self-compassion had *less* anxiety and *higher* levels of intrinsic motivation [6]. Additionally, the positive relationship between self-compassion and intrinsic motivation was mediated by greater perceived competence and mastery of goals (i.e., learning for the sake of learning, irrespective of outcome) associated with self-compassion [6]. These findings suggest that individuals who are self-compassionate may be better able to see failure as a learning opportunity and to focus on accomplishing goals, as opposed to ruminating on low self-worth and failure. In other words, people who are more self-compassionate are less afraid of failure and are more likely to try again and to persist after making a mistake [1].

Kristin Neff and Christopher Germer highlight that there is an important *active* component of self-compassion that is related to motivation. They refer to the yin and yang of self-compassion [1, 10]. The *yin* of self-compassion refers to what are generally seen as the "softer" attributes, or "being with oneself" in a compassionate way—comforting, soothing, and validating oneself [1]. The *yang* of self-compassion, on the other hand, is about "acting in the world"—protecting, providing, and motivating oneself [1, 10]. This concept of the yin and yang emphasizes that at times we may need to care for ourselves by providing comfort or soothing (i.e., by resting, speaking to ourselves kindly, or giving ourselves a break). At other times, we need to take the more yang "action-oriented" approach (i.e., by motivating ourselves, standing up for ourselves by saying "no," or solving a problem and pushing forward toward our goals). Therefore, self-compassion does not mean being self-indulgent. In fact, self-compassion encourages individuals to work toward their long-term goals and to make choices that will support their success, health, and well-being. Self-compassion motivates an individual to reach their goals *because they care about themselves* and want to reach their full potential, rather than because of a fear of being inadequate [1]. Motivating oneself and working toward achieving one's goals is, in this sense, a form of self-care.

**Skill-Building Exercise: Reflection**

Think back to your path of becoming a resident physician and your journey to medical school. What motivated you to study long hours for exams? What motivated you to participate in numerous extra-curricular activities while balancing a course-load? What got you through the long hours of clerkship and call? Was it the fear of not getting into medical school or failing medical school? Was it the love for what being a doctor would entail? Which form of motivation was stronger? How did these different forms of motivation impact your self-esteem and emotional state? Were there any benefits or negative consequences to these forms of motivation?

Now, reflect on the form of motivation you use when working with patients. If you were working with a patient suffering from addiction, would you take a harsh, critical approach by condemning the patient for relapsing and focus on their past mistakes? How effective do you think that would be? Would you take a strength-based approach, validate how common relapse is, focus on previous successes, and encourage them to use the relapse as an opportunity to learn, reassuring them that they are not defined by their relapse, and that change is still possible? How effective would this type of approach be?

Is there a difference between the motivational approach you apply to yourself versus others?

> Doesn't self-compassion mean throwing a pity party for myself? No thanks, I don't have time to wallow in my sorrows – I have patients to help.

Self-compassion, in fact, is the *antithesis* of self-pity. Self-pity is a process by which individuals become absorbed and attached

to their own problems, forgetting that others are experiencing similar things [3]. As a result, through self-pity, one gets carried away by their emotional reactions (i.e., "over-identification" as shown in Table 2.1). With self-compassion, in contrast, there is a recognition that everyone faces adversity (common humanity), and there is an emphasis on not over-identifying with the emotional reactions that arise from suffering (mindfulness), therefore preventing, or breaking, the cycle of self-absorption. Self-compassionate people are *more* likely to engage in perspective taking and *less* likely to ruminate, and in this way self-compassion helps to protect against anxiety and depression [11].

> Self-compassion is for wimps. I'm a doctor, I have to be tough and resilient to get through my career.

There is an increasing emphasis in medical education on building resilience in medical practitioners. As emphasized earlier, self-compassionate individuals are kinder to themselves when they fail, are more aware that failure is part of the common human experience, and are thus more able to see failure as a chance to learn and grow, rather than fearing that a negative performance may diminish their self-worth [6]. Being resilient and being kind to ourselves are not mutually exclusive. In fact, the components of mindfulness, common humanity, and kindness can be critical tools in resiliency training.

In a study of 213 medical professionals, allied health professionals, and trainees (physicians (38%), nurses (14%), social workers (24%), dieticians (11%), and others (12%)), resilience was strongly and significantly correlated with both mindfulness ($r = 0.5$; $p < 0.01$) and self-compassion ($r = 0.54$; $p < 0.01$) [12]. Mindfulness and self-compassion were also correlated with physical health, mental health, and perceived stress [12]. In a different study involving undergraduate students, self-compassion was associated with reduced negative affect and emotional reactivity in response to everyday difficult situations [13].

> Self-compassion is too 'fluffy' for me. I don't feel comfortable talking to myself in that way.

For many, the language of self-compassion, including the terms "self-compassion" and "self-kindness," can conjure up resistance. It is important to remember that self-compassion is about the *intention* to be kind to oneself. The words can be easily changed and personalized to reflect how one would naturally speak to themselves or others. What feels right and appropriate will be individual to each person and can change over time. Instead of using the word "self-compassion," for example, one may use the terms "inwardly directed friendliness," "inner-strength," "inner-resilience," "taming your inner critic," or whatever term feels most authentic. A helpful strategy may be to think of what one might say to a friend or a patient if they were facing the same challenge or experience and use similar language with oneself.

### Self-compassion is no different from self-esteem!

Self-esteem is predicated on a positive evaluation of self-worth and may lead to comparison and feelings of superiority to others [6]. This becomes difficult, especially in high-intensity, competitive environments like medicine as there will always be someone seemingly more successful and intelligent. As a result, self-esteem can fluctuate, being present when we succeed, but absent precisely when we need it the most [1].

Self-compassion, on the other hand, does not involve evaluation or judgment of ourselves or others. Instead, self-compassion encourages that individuals accept themselves as they are, especially when they fail or feel inadequate [1]. Self-compassion does not require comparison to our peers or feeling superior to others. Instead, we are reminded that all individuals are imperfect, including ourselves. As such, self-compassion is linked to less social comparison and narcissism [1]. Self-compassion provides a more stable sense of self, as it is not contingent on conditions like material success or positive performance. Kristin Neff explains that the goal of self-compassion is to become a "compassionate mess," acknowledging one's imperfections yet still accepting and relating to oneself in a friendly way despite these imperfections [1].

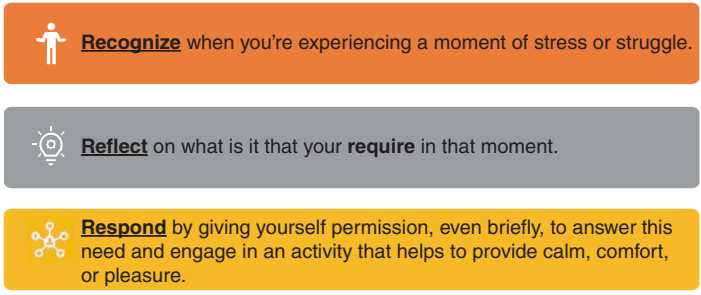


**Fig. 2.1** The 3 R approach to self-compassion (further expanded upon in Chap. 15, *Kindness Begins with Yourself*)

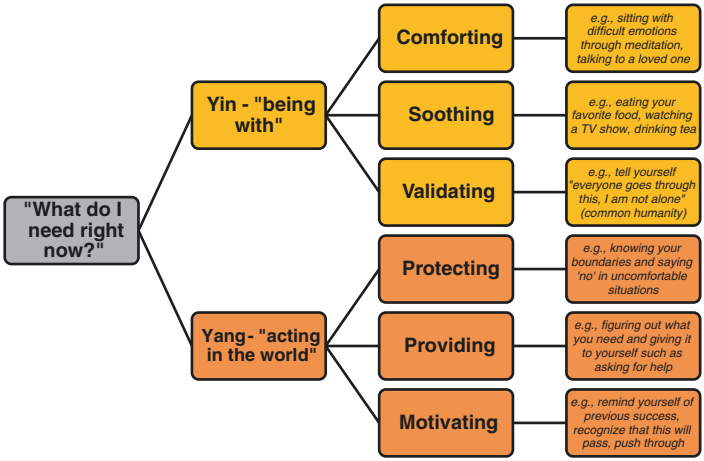


**Fig. 2.2** Self-compassionate responding using the Yin-Yang approach

**Skill-Building Exercise: What Do I Need Right Now? (Yin & Yang)**

Once we have recognized a moment of distress (*mindfulness*), we can then reflect and respond (see Fig. 2.1).

Reflect both on what you need in that moment and the *common humanity* of the situation.

Respond with *self-kindness*, using the yin and yang approach (see Fig. 2.2).

**Key Points**

- Self-compassion is associated with higher levels of motivation: people who are more self-compassionate are less afraid of failure and more likely to persist to achieve their goals [1, 6].
- The *yin* of self-compassion refers to "softer" attributes including comforting, soothing, and validating. The *yang* of self-compassion refers to "action" attributes including protecting, providing, and motivating [1]. It is helpful to ask oneself "what do I need right now?" and choose the approach that is most helpful for the given moment.
- Self-compassion is an antidote to self-pity. Self-compassionate individuals recognize that all individuals suffer and are less likely to ruminate in the face of mistakes or challenge [1, 11].
- It is important to use language that feels natural when practicing self-compassion. Individuals may use their own terms; e.g., "inner-friendliness," "inner strength," and "inner resilience," or whatever feels right to them.
- Self-compassion provides a more stable sense of self-worth than does self-esteem and is there for individuals *especially* when they fail or feel inadequate [1].

## What Are the Benefits of Self-Compassion, and How Does It Work? – A Look at the Evidence

An explosion of research over the last decade has demonstrated the benefits of self-compassion on mental and physical well-being. It is important to note that although self-compassion can vary in different individuals, it is not a fixed trait but rather something that can be learned [1]. Mindful self-compassion developed by Kristin Neff and Christopher Germer was the first training program specifically designed to enhance self-compassion [1]. Mindful self-compassion

is an 8-week course that introduces the construct of self-compassion and teaches individuals self-compassion practices (many of which will be introduced in Chap. 15, *Kindness Begins with Yourself*). People who take the mindful self-compassion course were shown to have increased their levels of self-compassion by an average of 43% [1], in addition to achieving other benefits including reduction in anxiety and depression, enhanced overall well-being, and even improved stability of glucose levels among those with diabetes mellitus [1]. It is noteworthy that the increase in self-compassion and other benefits were maintained 1 year later [1]. Other mindfulness-based training programs, such as Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT), have also been shown to increase self-compassion, but they do so implicitly as a by-product of mindfulness [1].

## Self-Compassion and Psychopathology

Several studies have shown the link between self-criticism and psychopathology, including positive association with major depressive disorder, severity of depression, specific depressive symptoms, and poorer response to treatment [14–17]. A large meta-analysis by MacBeth and Gumley sought to examine the relationship between self-compassion and psychopathology, primarily depression, anxiety, and stress. Included in the analyses were 14 studies representing 20 participant samples ($n$ = 4007). Their findings showed a strong negative correlation between self-compassion (as scored by the Neff Self-Compassion Scale) and the measures of psychopathology (depression: $r = -0.52$; anxiety: $r = -0.51$; stress: $r = -0.54$) [18]. In other words, individuals who were more self-compassionate had *less* depression, anxiety, and stress. These findings thus suggest that compassion plays an important role in understanding mental health and resilience.

## Self-Compassion and Well-Being

When discussing the benefits of self-compassion, it is important to not only reflect on its role in mitigating psychopathology, but

also on its role in overall well-being. Well-being is more than the absence of psychopathology. In psychological research, there are many different conceptualizations of well-being. A meta-analysis of 79 studies by Zessin and colleagues (overall sample size of $n = 16{,}416$) examined the relationship of self-compassion to four different forms of well-being: *cognitive well-being (*one's cognitive evaluation of life, often called "life satisfaction"); *positive affective well-being* (the presence of positive or pleasant affects); *negative affective well-being* (the absence of negative or unpleasant affects); and *psychological well-being* (fulfillment of one's true potential and living a meaningful life) [19]. Analyses of the 79 studies found the strongest correlations between self-compassion and psychological well-being ($r = 0.62$), followed by cognitive well-being ($r = 0.47$) and negative affect ($r = -0.47$), and lastly positive affective well-being ($r = 0.39$) [19]. Thus, individuals with higher levels of self-compassion had a significantly increased sense of meaning and fulfillment in their lives. In interpreting the findings related to increased cognitive well-being or increased life satisfaction, Zessin and colleagues used Diener's cognitive approach to well-being: top-down and bottom-up theories [19, 20]. In top-down well-being, the development of well-being is associated with an individual's focus on positive situations and a more positive interpretation of events (e.g., individuals perceive life events, whether negative or positive, in a more positive way, so the impact of the event is buffered by an internal perceptive filter) [19]. On the other hand, bottom-up well-being refers to the process by which positive situations increase the level of well-being and negative situations decrease the level of well-being (e.g., individuals are negatively affected by negative events, and positively affected by positive events, making them more susceptible to the impact of external events) [20]. Therefore, self-compassion could play a role in buffering negative events through cognitive reframing and recollecting more positive memories (e.g., not considering mistakes/failures as negative events, but rather perceiving failures as opportunities for growth and learning, thus integrating them more positively) [19]. Lastly, as explained by Neff and Dahm, self-compassion does not simply lead to the replacement of negative feelings with positive ones, but rather individuals high in self-compassion cog-

nitively *accept* and *integrate* negative experiences [21]. There is an acceptance of reality, including negative experiences, in a healthy way.

Additional research has shown that self-compassionate people tend to engage in more healthy behaviors including exercise and proper nutrition [1]. One study of 182 college students demonstrated that self-compassion was positively associated with increased psychological and physical well-being [22]. When investigators delineated the three components of self-compassion (i.e., self-kindness, common humanity, and mindfulness), there was a differential influence of these components on physical and psychological health. Self-kindness and common humanity were predictive of lower depressive symptomatology and increased physical well-being, whereas self-kindness and mindfulness were predictive of better ability to manage life stress [22].

In summary, people with higher levels of self-compassion experience greater physical and mental well-being, as illustrated in Fig. 2.3.


**Fig. 2.3** Correlation between self-compassion and physical and mental well-being

## Self-Compassion and Its Specific Role in Healthcare Providers

According to the 2018 Canadian Medical Association's (CMA) National Physician Health Survey, resident physicians reported high levels of burnout, depression, and lifetime suicidal ideation [23]; 48% of residents screened positive for depression, 32% for burnout, and 20% for life-time suicidal ideation [23]. The underlying reasons for high levels of distress among physicians and medical trainees are multifactorial and complex. An important factor that is relevant to the discussion of self-compassion is the continuous exposure of physicians to the suffering and pain of others. Neuroscientific research on mirror neurons has shown that similar brain regions are activated in observers as those activated in a person who is experiencing a particular sensation or performing a certain action [24]. When an individual learns of another's pain, this stimulates the same brain circuits and regions as if they were the one directly experiencing the pain themselves [25]. This is referred to as *empathic resonance* [1]. Witnessing suffering can therefore cause vicarious suffering or *empathic distress* [1]. Although empathy is a good thing, and particularly important for physicians and other caregivers, repeated exposure to patients' pain and suffering can lead to an accumulation of empathic distress and eventually this can be overwhelming. It may lead to burnout or what is often referred to as compassion fatigue. Compassion fatigue is discussed in more detail elsewhere in this book, but briefly, the term first emerged with the work of Charles Figley who defined it as "the formal caregiver's reduced capacity or interest in being empathic or 'bearing the suffering of clients'" [26, 27]. Some researchers have argued that compassion fatigue is a misnomer and that a more accurate term is *empathic fatigue* [24]. Regardless of the term that one uses to describe this phenomenon, caregiver fatigue is a sign of caring rather than a sign of weakness. In fact, caregivers who are more capable of empathic resonance are more vulnerable to experiencing caregiver fatigue [1]. Therefore, the same quality that makes one a good physician can also make one more vulnerable to suffering. (For further

details, see Chap. 10, *Recognizing Compassion Fatigue, Vicarious Trauma, and Burnout.*)

Kristin Neff also highlights an important difference between empathy and compassion. Empathy refers to a deep understanding of another's situation, such that the person empathizing is *feeling together* with the other individual [6]. Although compassion shares the elements of recognizing and relating to another's pain and suffering, it differs by embracing the suffering but *not suffering along with it* [7, 8]. While empathy says "I feel you," compassion says "I hold you" [1]. In this way, Neff explains that compassion is a positive and energizing emotion rather than a distressing one [1]. Compassion allows an individual to offer tenderness, support, and encouragement in a way that is not draining, but rather maintains the well-being of the caregiver [9]. In one study, individuals were trained for several days to experience either empathy or compassion, and then they were shown a short film depicting others' suffering [24]. When looking at the brain networks that were activated while the participants were watching the films, the individuals who had been exposed to compassion training produced more positive emotions as compared to the individuals that received empathy training [24]. Physicians cannot avoid being exposed to the suffering of patients. However, by changing the *relationship* to that suffering, physicians may be able to protect themselves from undue hardship.

How can self-compassion be helpful specifically in the medical context? By staying connected to themselves and being mindful of their empathic distress, clinicians can acknowledge how difficult it can be to listen and witness another's suffering and can allow for self-kindness during these difficult moments. Self-compassion also allows a clinician to recognize and meet their own needs so that they can sustain the ability to be present and available for others [1]. When physicians and other clinicians become so concerned with the needs of others that they do not meet their own needs, they are at risk of becoming depleted and less able to give over time [1]. This can be likened to a healthcare professional putting their own oxygen mask on before helping others. Self-compassion can also help decrease self-criticism and feelings of failure. Physicians and other clinicians can often be

self-critical, believing that they are "not doing enough" for their patients. A self-compassionate approach reminds clinicians that they have limited control over others' suffering, thus relieving the often-held sense of responsibility to "solve" suffering in the moment. Lastly, when a physician is able to comfort and soothe themselves when they are providing care to a suffering individual, the individual benefits through their own empathic resonance. The patient will be more likely to feel calmed and soothed by the calm and healthy mind state of the physician [1].

In a systematic review of 23 studies exploring the role of self-compassion in healthcare providers, all studies reported that self-compassion and well-being were associated with reduced levels of burnout, compassion fatigue, and/or stress symptoms in medical trainees, midwives, psychologists, primary healthcare providers, and other clinicians [27]. Self-compassion is therefore being considered a target variable in several education programs to both improve work-related stress and interpersonal functioning [27].

**Skill-Building Exercise: Pause and Reflect**

In "The Mindful Self-Compassion Workbook," Kristin Neff and Christopher Germer share some helpful reflections that remind us of our limited control over the suffering of others [1]. *They emphasized how our own life journey is a unique, individual experience, how we are not the cause of another person's suffering, nor is it always entirely within our own power to diminish the suffering, yet we may still try to help if we can [1].*

- Take a moment to reflect on these words and how they relate to your own experiences.
- How may this reflection help you to be self-compassionate during times when you are helping someone who is suffering?

## How Does Self-Compassion Work?

One hypothesis of the biological effects of self-compassion that is currently under research investigation is the connection between self-compassion and the mammalian care system [1, 28]. When the care system is activated in infants (e.g., through soothing touch and gentle vocalizations), oxytocin and endorphins are released which help the infant feel safe [28]. Compassion is linked to this mammalian care system and could thus play a role in reducing the stress response. This has been shown in studies exploring the role of self-criticism and self-compassion in mediating salivary stress markers [29–31]. In particular, perfectionistic self-criticism has been found to increase stress-induced salivary α-amylase and cortisol release, indicators of sympathetic and hypothalamic-pituitary-adrenal (HPA) axis activation [29, 30]. By contrast, self-compassion has been shown to be a negative predictor of stress-induced increases of salivary α-amylase [31]. Although still a working hypothesis, the role of self-compassion in mediating the stress response is a promising area of investigation.

**Key Points**

- According to the CMA National Physician Health Survey, residents reported high levels of burnout, depression, and lifetime suicidal ideation [23].
- There has been an increasing interest in self-compassion training for health-care providers to help address compassion fatigue and burnout [27].
- Evidence has shown strong negative correlation between self-compassion and psychopathology (e.g., depression, anxiety, stress) [18].
- Self-compassion has been shown to have strong positive correlations to various forms of well-being. Individuals that are more self-compassionate have increased levels of cognitive and emotional well-being [19].

- Resilience in healthcare professionals has been shown to be strongly and significantly correlated with self-compassion [27].
- Self-compassion is associated with *better* physical health and mental health and *less* perceived stress, negative affect, and emotional reactivity [1, 19, 22].

## Check Your Learning

### Case Studies

#### Case I

Amrita is a general surgery resident in her second year of training. In medical school she enjoyed her surgery rotations particularly because of the demand for precision, working with her hands, and seeing direct results. She also admired many of her preceptors, who excelled at their work and were confident leaders in the operating room.

In her first year of residency, Amrita found the transition of responsibility to be more challenging. She found that as a resident, her preceptors expected a lot from her. It was an unwritten rule in her field to stay late, read around cases, and be heavily involved in research at the same time. With her busy schedule, Amrita found herself rushing to finish an abstract one night to meet a deadline for an upcoming conference. After staying up late into the night, she reported to work the next day to operate. With her recent interest in mindfulness practice, she checked in with herself walking into the OR, noting the heaviness of her eyes and her clouded mind. Although usually very meticulous, today during the surgery Amrita ended up breaking the sterile field. She also struggled when asked about specific anatomy during the cholecystectomy due to not having time to review the night before.

Amrita came home tearful and finding herself overwhelmed by shame and embarrassment. She called her partner saying, “I

should have worked harder. All the other residents seem so on top of their game, yet here I am performing at the level of an R1."

***Question.*** **How might Amrita handle this situation which would reflect a self-compassionate approach as opposed to a self-critical one?**

A. Amrita recognizes that she feels guilty and upset by the situation. She reflects that what she needs right now in order to cheer herself up is to put on an episode of her favorite show. She also decides to call her sister and talk through what happened, and then get a good night's rest.
B. Amrita spends the rest of the night replaying the surgery in her mind, questioning herself and her abilities, and fixating on her perceived incompetence. In response, she pulls another all-nighter reading around the next case in hopes of impressing her preceptor.
C. Amrita takes some time to reflect on the struggle and stress that arose from her performance, recognizing that her reaction and emotions are normal and understandable given the circumstance. She also reminds herself that this was a common mistake, and that many other residents have likely made similar mistakes. She also recalls her friend at another school experiencing the same doubt when he could not answer several questions during his clinical teaching unit (CTU) elective. She remembers telling him that as a resident, he is still learning, and that the point of residency training is to continuously learn and expand on knowledge and expertise over time. She remembers encouraging him to see this experience as an opportunity to identify learning goals and topics that he can read around, rather than seeing this as an indication of failure. She realizes that this applies to her current situation as well. Amrita reminds herself that she works very hard, cares deeply for her patients, and that there is something she can learn from this situation going forward. She decides to write out a learning plan that she will review with her supervisor the following day. She also

reflects on the impact that sleep deprivation had on her ability to focus that day. She decides to go to bed earlier that night to allow herself to get the rest that she needs, knowing that being rested will put her in the optimal state to begin working on her new learning goals.

**Answer: A or C ✓**

*Recall Fig. 2.2. While answer B may be the typical knee-jerk response for most medical learners when such a situation arises, this is reflective of self-criticism and pushing oneself past one's limits. Although this may seem like the "yang" action-oriented approach to self-compassion, reflect on what Amrita needs in moment. She already felt tired and absent-minded during the surgery and likely needs rest to perform optimally. Her rumination would likely promote feelings of worthlessness and ineptitude, and could eventually amount to Amrita experiencing shame as she suspects no one else in her cohort would have made the same mistake.*

*Answers A and C however are more suggestive of a self-compassionate approach to the situation. In answer A, Amrita takes a "yin" approach and recognizes that, in this moment, it would be helpful to watch her favorite show. She also calls her sister and likely receives validation. This helps to provide her with some mental distance from the event and to help diffuse and lessen the intense distressing emotions she is experiencing. By giving herself permission to take a TV break, she demonstrates some kindness to herself and her needs. Similarly, answer C demonstrates the validating component of "yin." By taking some time to reflect on the common humanity shared by residents, she can see this situation as a learning opportunity and part of her growth as a junior physician, rather than a personal failure. This motivates her to take accountability and develop new learning goals, in keeping with the action oriented "yang" approach. She also recognizes that this is an opportunity to reflect on factors, such as sleep, that may impact on her learning and performance, and that she can optimize over time to increase her chances of success.*

## Case II

### Case II Part I

Kevin is an internal medicine resident in his first year of training. During his rotation in the CTU, he begins to feel the impact of his long hours. Normally a very caring person, he finds himself struggling to be empathetic with most of the patients on his ward. More recently, Kevin has started to have some trouble sleeping and has developed a poor appetite. Despite all that has been going on, Kevin finds himself particularly connected to an older gentleman on his ward – Mr. Chen.

Mr. Chen, a former WWII veteran, was admitted to hospital with an acute kidney injury. Despite initially doing well, recently, his health has been deteriorating. Kevin really enjoys chatting with Mr. Chen, as he reminds him of his own grandfather who also served in the war. One night during Kevin's call shift, Mr. Chen has a cardiac arrest. A code blue is called and despite several rounds of cardiopulmonary resuscitation, Mr. Chen ends up passing away.

Kevin spends the rest of the shift filled with emotion. After connecting so strongly with Mr. Chen and his family, he feels like he should have done more. He starts to have thoughts about being inadequate and feels as though he may not be cut out for medicine.

***Question.*** **How might Kevin handle this situation using a self-compassion approach?**

A. Kevin recognizes the recent changes in his sleep and appetite as a worrying sign. He reaches out to his old roommate Bo, who is a first-year resident at a neighboring school. Bo validates Kevin saying that he too had a similar experience during his internal core of clerkship. He suggests that Kevin reaches out to his Student Affairs office to seek counseling. Kevin is initially hesitant, thinking that his problem is not serious enough to seek counseling for. However, he ends up seeking out support and finds value in his counselor's non-judgmental approach. Through this experience he realizes

that he can be kinder to himself by reflecting more on what was in his control and what was not.

B. Kevin opens his daily journal to his first few rotations and reflects on his previous successes and the fulfilling patient interactions he has had in the past. He spends some time writing about his experiences from the call shift and finds comfort in this. He becomes more aware of the emotions that he is experiencing by writing them out and finds himself resisting them less.

C. Kevin, feeling extremely guilty about his patient passing away, forgoes his post-call nap to read up on acute kidney failure. He calls his family to let them know that he will not be able to make it to the family dinner as he is extremely busy and needs to do work.

**Answer: A or B ✓**

*Recall Fig. 2.2. Similar to the previous case, answer C may again be reflective of self-criticism and pushing oneself past one's limits. Answers A and B are more suggestive of a self-compassionate approach to the situation. In answer A, Kevin takes both a "yin" and "yang" approach by seeking out support from a friend and eventually a counselor. He not only feels validated, but he also is providing for himself and his needs. In answer B, Kevin is able to find comfort through his journaling and taking a mindful approach to his difficult emotions.*

### Case II Part II

The next day, Kevin comes into work to a note left for him with the nursing staff. He finds a thank you card from Mr. Chen's family. The note states how thankful the family is that Kevin took the time to hear Mr. Chen's story and look at him as more than just a sick person. Kevin's preceptor shares with Kevin the reflections from Kristin Neff and Christopher Germer's "The Mindful Self-Compassion Workbook" previously discussed in the skill-building exercise at section "Self-compassion and Its Specific Role in Healthcare Providers" [1]. Once again, those authors reminded us about our own life journey as a unique, individual experience; that

we are not the cause of another person's suffering, nor is it always entirely within our power to diminish the suffering, yet we may still try to help if we can [1].

These words remind Kevin that it was not within his power to prevent the outcome of Mr. Chen's complex medical condition. However, he was still able to help by providing compassionate care and giving Mr. Chen dignity and respect during his final days.

**Key Takeaways**

- Self-compassion as defined by Kristin Neff is divided it into three components [3]:
  - Self-kindness versus self-judgment
  - A sense of common humanity versus a sense of isolation
  - Mindfulness versus over-identification
- With self-compassion we *mindfully* accept that the moment is painful and embrace ourselves with *kindness* and care in response, remembering that imperfection is part of the *shared human experience* [3].
- Self-compassion increases motivation and resilience [1, 5].
- Several systematic reviews and meta-analyses have shown the relationship between self-compassion and overall well-being, reduced psychopathology, and health-care provider well-being [1, 19, 22, 27].

## Additional Resources

Table 2.2 shows some selected resources about self-compassion. For a more comprehensive understanding of self-compassion, guidance into the practice, and list of exercises and meditations, please utilize the resources listed at the end of this chapter (see Table 2.2) and also read Chap. 15, *Kindness Begins with Yourself*.

**Table 2.2** Additional resources about self-compassion

| Additional resources | Description |
|---|---|
| The Space Between Self-Esteem and Self Compassion: Kristin Neff at TEDxCentennialParkWomen [19 minutes] https://www.youtube.com/watch?v=IvtZBUSplr4 | A great introductory TED talk to self-compassion. Neff shares the three-pronged definition of self-compassion and talks at length about the difference between self-esteem and self-compassion. "You know how to be a good friend and comfort someone. I invite you to be a good friend to yourself. It's easier than you think, and it really could change your life." |
| Podcast: *Ten Percent Happier* with Dan Harris Episode #209: Kryptonite for the Inner Critic, Self-Compassion Series, Kristin Neff https://open.spotify.com/episode/4E4sOrUZmnFTzQd8kSB621 | A wonderful podcast episode where Kristin Neff shares her journey to self-compassion with Dan Harris, an ABC news-anchor. She addresses many of the common myths of self-compassion and how it can be applied in everyday life. |
| Centre for Mindfulness Self-Compassion https://centerformsc.org | A comprehensive website that provides information on where one can access mindful self-compassion courses or circles of practice in their area, how to complete training to become a mindful self-compassion teacher, as well as offers a variety of audio-guided meditations and exercises. |
| *The Mindful Self-Compassion Workbook* by Kristin Neff and Christopher Germer | An easy-to-read workbook that provides more exposure into the science and psychology behind mindful self-compassion. It also offers a step-by-step guide that helps readers build their capacity to experience and foster self-compassion through offering a variety of real-life examples, exercises and guided practices. |

(continued)

**Table 2.2** (continued)

| Additional resources | Description |
|---|---|
| Self-Compassion – Kristin Neff<br>https://self-compassion.org<br>https://self-compassion.org/test-how-self-compassionate-you-are/ | Considered one of the experts and founders of mindful self-compassion, this website is Kristin Neff's all-in-one resource for all things self-compassion. It includes ample videos explaining the core concepts and principles of self-compassion, research and evidence, as well as a number of self-compassion guided meditations and exercises. |

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# 3

# Sustainable Humanistic Medicine in a World of Climate Change and Digital Transformation

Ana Hategan, Sumit Chaudhari, and Jane Nassif

## Building Sustainable and Climate Change-Resilient Healthcare Systems

### Climate Change and Health Consequences

Climate change and its associated increase in greenhouse gas emissions are significantly influencing individual and societal health [1]. The greenhouse effect is a natural process that warms

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our planet's surface. When solar radiation reaches the Earth's atmosphere, some is reflected back into space by clouds, ice, snow, sand, and other reflective surfaces, and some is absorbed by land, oceans, and atmosphere [2]. As oceans, lands, and atmosphere heat up, they release heat, which is radiated back toward space [2]. Some of this heat is trapped by greenhouse gases in the atmosphere, keeping our planet warm enough to sustain life. However, increasing greenhouse gases such as carbon dioxide, nitrous oxide, methane, ozone, and others, through increased trapping of heat, are gradually making the planet warmer [2]. Natural causes that contribute to greenhouse effect include changes in solar energy, volcanic activity, and natural changes in greenhouse gas concentrations [2]. However, recent climate changes cannot be explained by natural causes alone [2]. Scientists have determined that human activities are responsible for almost all of the increase in greenhouse gases in the atmosphere over the last 150 years [2, 3]. Carbon dioxide is the main contributor to human-induced climate change [2, 3]. For example, in the United States and Canada, the largest source of greenhouse gas emissions from human activities is the burning of fossil fuels (coal, oil, and natural gas) for electricity, heat, and transportation [2, 3].

**Did You Know?**

*Global warming is a global average increase in combined air and sea surface temperatures over a 30-year period [1]. In 2017, human-induced global warming reached approximately 1 °C above preindustrial levels (period 1850–1900) [1].*

In 2018, the United Nations Intergovernmental Panel on Climate Change (IPCC) released its landmark report, which illustrates the irreversible effects of 1 °C rise in average global temperature that has occurred since the industrial revolution

[1]. These concerns were subsequently echoed by the 2018 Fourth National Climate Assessment from the US government that calls for action to mitigate climate change effects and increase scaled adaptation efforts to avoid substantial damages to the economy, environment, and human health over the coming decades [4]. The 2018 Lancet Countdown on health and climate change is another important report which tracked multiple global indicators including adaptation, planning, and resilience for health [5]. A strategic message of this report is that health potentially holds the key to humanizing climate change conversations, thus spurring more rapid and effective global behavioral changes [5].

Climate change poses many detriments to the health of the planet and its inhabitants. For example, extreme weather events such as floods, wildfires, and heat waves are expected to increase over the next century, with potentially catastrophic risks to human and societal health [5]. As further illustrated in the next skill-building exercise, extended heat waves can be associated with increased heat-related diseases and mortality, particularly in vulnerable populations, such as the older adults and those with pre-existing health conditions [5]. Extended heat will also increase the demand for cooling, thereby increasing household electricity costs [5]. Warmer temperatures will allow the spread of pests and disease vectors into new regions [5]. Therefore, global climate change can bring about a myriad of human health consequences, and a careful and discriminating planning effort for future humanitarian disaster response is necessary.

Global experts expect climate change to greatly compromise public health infrastructure, either directly (i.e., through weather extremes disrupting essential services) or indirectly (i.e., through the overwhelm of subsisting services), with resultant increase in the burden of disease [5] (See Fig. 3.1). Experts urge continued investment in and strengthening of our adaptive capacity in response to the consequences of global climate change, prioritizing preparedness for multi-hazard public health emergencies [5].

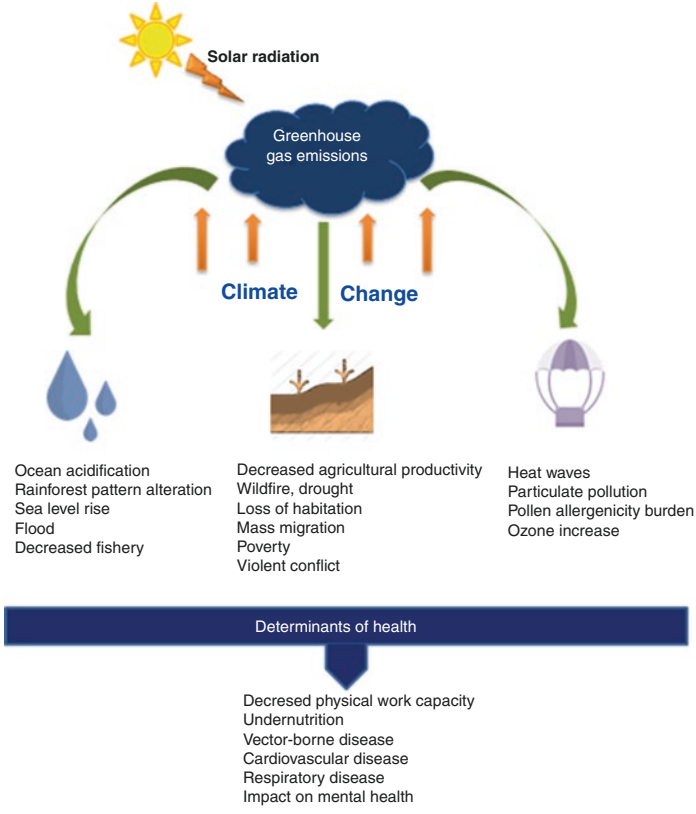


**Fig. 3.1** The association between climate change and health. (Data derived from [5])

**Skill-Building Exercise: Greenhouse Gas Emissions and Public Health – An Inverse Association**

Take a moment to consider the impact of climate change over the next generations. How do you envision human health will be affected by changes in the climate?

Long-term climate change directly and indirectly impacts life as we know it in disruptive ways. The 2018

Lancet Countdown report highlights the following examples of climatological change and consequence [5]:

- Power outages caused by powerful storms or wildfires that paralyze hospitals and transportation
- Warmer average temperatures leading to drought and reduced agricultural productivity, threatening food security with consequent nutritional effects, poverty, mass migration, or violent conflicts
- Decreased labor productivity and increased occupational hazards in risk groups (e.g., construction workers, farmers) due to increased risk for heat strokes
- Rising sea levels impacting freshwater supply for those living in low-lying zones
- Ocean acidification reducing fishery, leading to undernutrition
- Biodiversity loss and ecosystem collapse leading to changing patterns of diseases, such as:
  - Vector-borne infectious diseases (e.g., malaria, Lyme disease, mosquito-borne dengue fever)
  - Respiratory disease due to overabundance of mold or fungi
  - Mental health problems such as anxiety and depression associated with weather-related traumatic events

Although some of the current damage to our planet might be irreversible, it is not too late to positively alter the course for future generations [6]. The Fourth National Climate Assessment from the US government on the impact of climate change on society provides hope that humanity can still change course and temper further negative effects associated with climate change [4]. This study encourages that if action is taken now, mitigation efforts might begin to show results by the middle of the century [4]. The 2018 Lancet Countdown on health and climate change by Watts and colleagues provides a snapshot and further direction for multiple global indicators at the intersection between climate

change and health [5]. Watts and colleagues believe that emphasizing health to "humanize" the climate change narrative will more effectively capture attention and invoke behavior change [5, 6]. At the 2019 United Nations Climate Change Summit, leaders from government, business, and civil society announced potentially far-reaching steps along a roadmap to confront climate change [7]. Aside from the crucial engagement of governments to better apply their influence, the collective voice of individuals has power to accelerate the growing demand for change. Physicians, both as individuals and as a united professional community, have an essential role in such advocacy efforts. It is the hope that wide dissemination of recent research findings will mobilize individuals to action, and increase awareness of the tremendous health impact of climate change at national and international levels, so as to accelerate governmental response.

**Did You Know?**

*(Data derived from [8])*

- *Without naturally occurring greenhouse gases through incoming and outgoing radiation that makes the Earth habitable, the planet's average temperature would be near 0 °F (or −18 °C) instead of the much warmer 59 °F (15 °C).*
- *Eighteen of the nineteen warmest years on record have occurred since 2001.*
- *Winter temperatures in the Arctic have risen by 3 °C since 1990.*
- *Global average sea level has increased nearly 7″ (178 mm) over the past 100 years.*

## Carbon Footprint in Medicine

A carbon footprint is measured in "tonnes of carbon dioxide equivalent" [9]. This allows the different greenhouse gases (including the noncarbon-based gasses) to be relatively compared

to one unit of carbon dioxide. Carbon dioxide equivalent is calculated by multiplying the emissions of each greenhouse gas by its 100-year global warming potential [9].

As physicians, we leave behind a carbon footprint which over time is collectively adding to negative impacts on health. Hospitals have one of the highest energy intensities of the commercial/institutional sector [10]. For example, a study looking at the total impact of the healthcare system found that the medical sector is responsible for 8% of the total US greenhouse gas emissions, with hospitals owning the largest share of the contribution at 39% [11]. In recent years, an international study of the Organization for Economic Cooperation and Development (OECD) countries reported that Canada and the United States had the highest hospital energy use intensity, which was almost double that of European hospital energy use [10].

To date, there has been no systematic global standard for measuring the greenhouse gas emissions of the healthcare sector; however, several medical systems around the world are working to find a way to measure and reduce their greenhouse gas emissions [5]. The United Nations Intergovernmental Panel on Climate Change (IPCC) report provided a roadmap detailing society's best possible way forward [1]. For example, researchers have stipulated that in order to limit global warming to only 1.5 °C, a worldwide 50% reduction in carbon emissions is imperative by 2030 [1]. By 2050, 80% of global power will need to be generated by renewable sources, with coal generating no more than 7% of electrical power (down from nearly 40% at present) [1].

**Did You Know?**

*Indicators of investment in low-carbon economy and zero-carbon energy are already evident, with growing numbers of people employed in renewable energy sectors worldwide [5]. For example, in 2017, there were more than 2 million electric cars on the road; China was responsible for more than 40% of electric cars sold globally [5].*

**Table 3.1** Elements of a climate-friendly hospital [13]

| Elements | Description |
|---|---|
| Energy efficiency | Reduce hospital energy consumption/costs through efficiency and conservation measures |
| Alternative energy generation | Produce and/or consume clean, renewable energy onsite to ensure reliable and resilient operation |
| Food | Provide sustainably grown local food for patients and staff |
| Water | Conserve water<br>Avoid bottled water when safe alternatives exist |
| Waste | Reduce, reuse, recycle, compost<br>Employ alternatives to waste incineration |
| Transportation | Use alternative fuels for hospital vehicles<br>Encourage walking and cycling to the facility<br>Promote staff, patient, and community use of public transport<br>Site healthcare buildings to minimize the need for staff and patient transportation |
| Green building design | Build hospitals and medical care facilities that are responsive to local climate conditions and optimized for reduced energy and resource demands |

Operating rooms can contribute to a significant proportion of carbon footprint; however, each specialty has its own contributions and thus opportunities to reduce carbon and save money [12]. In this vein, the World Health Organization has identified seven elements of a climate-friendly hospital, as summarized in Table 3.1 [13]. Furthermore, studies have indicated that reducing the carbon footprint of healthcare requires action not only to cut waste and energy use but also to reform care pathways (e.g., reducing avoidable hospital admissions and length of stay) [12]. As such, the health sector can play an essential role in mitigating climate change effects.

For concerned physicians, there are many ways to reduce their carbon footprint, both within personal and medical communities. Physicians can importantly adopt a "green" perspective and endorse less environmentally harmful practices. The following are a few examples of immediate actions to implement in order to reduce healthcare's carbon footprint [5, 14]:

- Develop strategies to reduce professional airplane travel, where feasible. Instead, adopt a greater reliance on telecommunication, videoconferencing, and online platforms for professional medical education and networking.
- Provide central locations and remote interviewing modalities to residency training programs.
- All physicians must travel to their place of work. Where feasible, changing the method of commute to walking or cycling instead of driving by car will not only reduce one's carbon footprint but also increase physical activity. Consider public transportation and car-pooling when distance or weather makes these options less feasible.
- Telemedicine services (videoconferencing technology) have the potential to reduce travel for appointments and, subsequently, carbon emissions.
- The "throw-away" convenience culture, which allows purchase of disposable items with which to eat and drink, impacts one's well-being and the carbon footprint. Store utensils and dishes at work or bring reusable containers from home.
- The meals we consume also contribute to the carbon footprint. Consumption of red meat, particularly processed red meats, for example, has been associated with increased greenhouse gas emissions [5]. Eating fewer processed meals and bringing more fresh foods from home can help improve one's health and also reduce the dietary carbon footprint. However, this has drawn some controversy as meat consumption reflects only one aspect of sustainable diets, which is unlikely to have equal health implications for high-income countries with high-level ruminant meat (e.g., beef, bison, and lamb) consumption versus low-income countries with low ruminant-meat consumption [5].
- Although some hospitals have lights with automatic sensors, others still rely on switches which can be turned off manually. Turning off lights before leaving home and work reduces electricity use. Turning off computers and screens at home and work before leaving also helps.

Although the current politicization of climate change makes it challenging to take meaningful and necessary actions, physicians have a critical role to play in encouraging comprehensive solutions to climate change [15]. They must continue to educate themselves about the health hazards of climate change to patients, medical practices, communities, and their own well-being, as well as to educate the public [15]. Some argue that environmental sustainability should be included alongside other quality of healthcare dimensions such as safety and patient-centeredness [12]. To date, recycling efforts in healthcare rely largely on dedicated individual staff within departments or sites [12]. In a 2019 national survey of 426 respondents on attitudes and barriers to recycling and environmental sustainability efforts among Canadian anesthesiologists, 97.5% were willing to recycle but only 30.2% did so [16]. In this study, lack of support from medical leadership and inadequate information/education on how to expand sustainability programs at their institutions were listed as barriers. As future environmental and waste reduction practices advance at local, municipal, and state levels, health authorities will need to align their operations to ensure compliance.

**Skill-Building Exercise: Pause and Reflect**

Healthcare professionals, including physicians, have a history of driving change to combat healthcare crises. Physicians believe that climate change is one of the greatest public health challenges of the twenty-first century [17]. For example, in 2019, the American Medical Association was among several medical and public health groups that issued a call to action asking the US government and business and civil society leaders to recognize climate change as a health emergency and to work across government agencies and with communities and businesses to prioritize action on mitigating the climate change effects [17]. Take a moment to reflect on the following questions below:

- Who are the physicians you know in your local area advocating for a sustainable response to climate change?
- What are the barriers to physicians advocating more actively for a sustainable response to climate change?
- What are physicians going to do about this global crisis going forward?
- How can *you* as an individual physician help fight climate change?

## Pursuing Humanistic Medicine in a Rapidly Changing World

### Humanistic Attributes of the Healthcare Professional

Medical humanism (detailed elsewhere in this volume) is based on attitudes and behaviors characterized by humility, compassion, and respect between medical professionals and their patients [18]. Figure 3.2 briefly illustrates the key humanistic attributes a medical professional must demonstrate [18, 19]. (See Chap. 1, *Humanism and the Physician*, for further details on medical humanism.)

Because the healthcare industry is a substantial contributor to climate change, accounting for almost a tenth of US greenhouse gas emissions, physicians must consider the related stakes for human health [11]. In this view, many argue that physicians have a professional responsibility to take action, as key players in the healthcare system and advocates for individual, community, and global health. Along these lines, practicing medicine in a humanistic way remains increasingly important in this changing healthcare landscape.

As discussed further in Chaps. 1 and 16, cultivating and supporting humanistic attributes among medical trainees is essential [18]. As illustrated in Fig. 3.2, the following is a brief description of key humanistic attributes of a medical professional [18]:

- *Integrity* refers to the correlation between one's expressed values and one's behaviors.

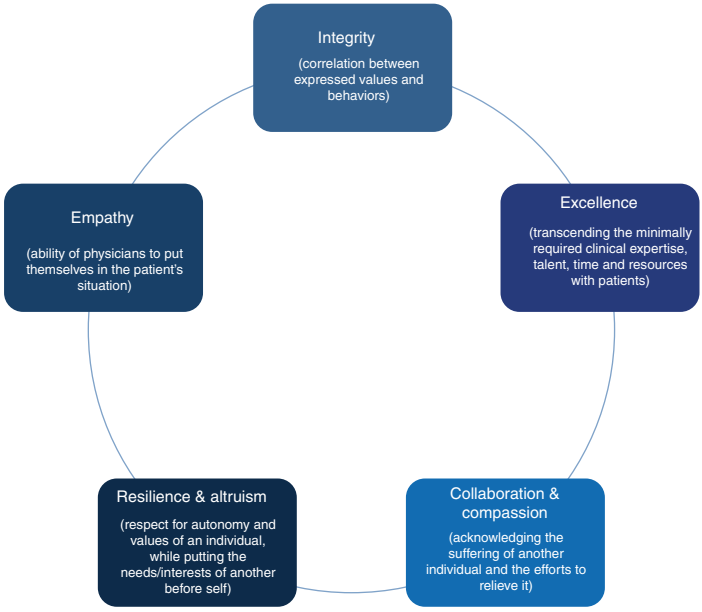


**Fig. 3.2** Key humanistic attributes of a medical professional

- *Excellence* in clinical service represents sharing beyond what is minimally required of one's clinical expertise, talent, time, and resources with individual patients, to include community and population health needs.
- *Compassion* refers to a collaborative approach that acknowledges the suffering of another individual and the efforts to relieve it.
- *Resilience* and *altruism* concern the respect for autonomy and values of an individual, while putting the needs and interests of another before self.
- *Empathy* is the ability of physicians to put themselves in the patient's situation.

Regarding the attribute of empathy, research has found a relationship between medical trainees' empathy and burnout, which

may have further implications in the designing of interventions to promote trainee well-being [20]. The skill required to effectively and sustainably practice medicine amid global climate change is likely to remain a subject of ongoing debate. Nevertheless, there is a clear role for medical education to build awareness and capacity by integrating this important topic of climate change into core teaching, as an opportunity for future physicians to develop insights and skills essential for practicing humanistically in a climate-changing world [21].

## Digital Physician in a Humanistic Medical World

Humanistic professional talents, alongside the technology skill requirements of modern medicine, can be fostered and learned during medical training [19]. Current practice is for medical educators to increasingly choose or engage in online teaching [22]. This implies the need to foster proficiency to teach, promote, and sustain humanistic values through digital methods.

Recent years have seen a surge of innovations and adjustments to meet required milestones in medical education across the continuum, supporting new models of learning and assessment of acquired competency. In the same way that one cannot safely drive a car using only the rear-view mirror, programs cannot continue to educate medical trainees using only curricula that are historically informed and situated. Looking into the future, medical education innovators must prioritize incorporation of digital and emergent technologies. Virtual medicine can provide medical educational innovation for trainees, including the teaching of humanistic attributes [23]. For example, a study has shown that virtual reality immersion training can be an effective teaching method to help medical trainees develop empathy [23]. Virtual medical advancements also expand patient care options; for example, virtual medicine supports provision of medical care to patients in the comfort of their own homes, spanning geographic boundaries and limiting the carbon footprint [24].

## Digital Humanism

Digital humanism is the convergence between our complex cultural heritage and technology and includes the application of digital resources in the humanities [25]. How digital humanism is set to unfold in future medical care frameworks remains to be seen. Channeling the values of humanism into the core of technological development has the potential to support the creation of "humane technology" [25]. The ideal would be the creation of interfaces that are responsive to human needs and considerate of human frailties [25].

In the case of healthcare, digital technologies and software algorithms must be designed to reflect humanistic attitudes and approaches. As such, these digital technologies need to incorporate certain attributes, including the following [25, 26]:

- Accessibility to anyone, beyond social, financial, or educational barriers.
- Safeguarding of sensitive patient information as a high priority (e.g., unauthorized access to large data on genetic and genomic information could jeopardize patients).
- Be governed by effective regulations, rules, and laws, based on a broad public discourse.
- Be a support (but not replacement) to human decision-making through automated decision-making systems. The transparency and accountability of smart algorithms should be among the first concerns of health technology developers.
- Be a promoter of diversity and collaboration among different disciplines as well different groups in society, so as to increase the applicability, effectiveness, and efficiency of health-related technological products.
- Maintaining a clear vision aligned with new medical education standards and curricula, combining knowledge from the humanities, social sciences, and engineering studies.

## The Practice of Humanistic Medicine

As illustrated in Fig. 3.3, the practice of humanistic medicine typically requires the following two elements [27]:

(i) Sufficient time
(ii) Appropriate focus


**Fig. 3.3** Key elements of practicing in a humanistic medicine

In the high-speed, contemporary work environment within which healthcare is delivered, both the elements of *time* and *focus* may be challenged. Sufficient time is required for nurturing the "shared presence" between physician and patient, or between educator and medical trainee, in order for the interpersonal experience to be transformative [27]. Moreover, our culture has expeditiously become one driven by digital technologies that share information instantaneously (e.g., e-mail messages, smartphone texting, laboratory results auto-downloading into EMRs at all hours). The speed at which information is shared and the demands associated with using these new technologies and devices have set a quickening pace for the human race.

**Key Point**

There will be times when physicians feel that they require more *time* spent directly with the patient than is available in the brief, increasingly complex consultations they face. As healthcare professionals, taking the necessary time to show compassion and provide humanistic care for patients is a priority to be preserved.

Physicians, and society as a whole, are increasingly living in an age of distraction partly created by technology and the multiple electronic signals constantly received [27]. Modern life is

technology-driven and information-saturated. Information, even if helpful, can become a distraction if one is not prioritizing, evaluating, or analyzing it. In an effort to facilitate the creation and sharing of information, ideas, and other forms of expression via virtual communities and networks, people have created and use technologies such as Facebook, Twitter, WhatsApp and other virtual worlds, which in turn have been shown to challenge our ability to focus.

Since the introduction of the mobile phone in the 1980s, these devices have become almost ubiquitous worldwide. The technologies of today (e.g., communication devices, personal computers, and the Internet) confer nonstop information, often leading to distraction and, in some cases, to health problems. Studies have shown that small screen and internet technology can become lifestyle determinants of health and illness [28]. Recent research has been interested in conditions stemming from misuse or overuse of technology; the following are some examples:

- "Nomophobia" (an acronym for "NO MObile Phone PhoBIA") is the fear of having no mobile phone handy [29].
- "Phantom vibration or ringing" is the sensation that a phone has vibrated or rung when it has not [30].
- "FoMo," which is an acronym for "Fear of Missing Out," reflects a compulsive concern that one may miss rewarding experiences from which one is absent [31].

**Did You Know?**

*In a preliminary study of 946 Australian youth (aged 15–24 years), 61% of subjects checked their smartphones upon awakening in the morning [32]. In this study, factors relating to one's self-concept and approval from others both impacted on young people's mobile phone involvement [32]. However, a large-scale representative panel data found that social media use is not, in and of itself, a strong predictor of life satisfaction across the youth population [33]. Instead, those researchers found that social media effects are small, at best, and contin-*

*gent on research methods. It is crucial that scientists and policy makers cooperate more closely to unravel the complex constellation of effects shaping individual health and lifestyle in the digital age.*

One of the challenges with any new technological device in medicine is its potential to emphasize technology over the patient, subsequently compromising the connection that lies at the center of the patient-physician therapeutic relationship [27]. For example, many physicians struggle with the use of electronic medical records (EMRs). Research has shown that today's physicians are spending more than twice the amount of time looking at screens than working with patients [34]. For every hour of providing direct face-to-face clinical care to patients each day, physicians spend nearly two additional hours on EMR and desk work [34]. Moreover, physicians spend up to 2 hours of personal time each night outside of office hours on EMR documentation [34]. EMRs generally improve workflow; however, in some places an EMR was shown to amplify already broken workflows and processes [35]. (See section "The Future of Work: Deep Versus Shallow Work" for more details on the impact of technology in medicine.)

When a physician spends more time looking at the computer than the patient, it disrupts rapport and the flow of the conversation, as the physician may be perceived as distracted or disengaged [36]. Consequently, the patient-physician relationship, which is the heart of medicine, can be negatively impacted by technology at the bedside and in patient care rooms [37]. Although this may not be directly related to lower patient satisfaction, it could affect how openly patients engage in discussing their own concerns and needs [36].

Nevertheless, the force of technological advancement and progress cannot be ignored, and physicians must endeavor to prioritize time in the real world with their patients, in addition to the requirements of virtual world. Consequently, physicians must find a balance between establishing face-to-face human connections with rationally gauging their use of digital devices (Fig. 3.4). For instance, artificial intelligence, or AI (detailed later in section "Artificial Intelligence Technology in Medical Education and Clinical Practice"), has the potential to transform the daily work

**Fig. 3.4** Balancing act of the physician between face-to-face human and digital device connection

of the physician from notetaking to diagnosis and treatment, potentially reducing the cost of healthcare and increasing patient survival. By freeing physician time from administrative tasks that interfere with direct patient connection, AI could create space for the humanistic therapeutic alliance that takes place between a physician who can listen and a patient who needs to be heard [37].

**Skill-Building Exercise: Pause and Reflect**

As humans live longer and more people require healthcare, pressure is building for physicians to care for more patients. Thus, physicians may feel compelled to spend a shorter time with each patient. Limited face-time with patients during a medical visit may create heightened stress for physicians and can compromise their ability to more fully know the patients they treat.

Imagine how the future of medical service delivery might look 100 years from now. How can physicians prevent the practice of medicine from being replaced by more efficient, profit-driven, assembly-line cybernetic medicine where humanistic physicians may have a lesser role?

## The Skills of Focusing When Distracted: What Can Be Done Now

Our ability to sustain attention is under scrutiny. Constant distraction is the seeming challenge we face more than ever before in human history. Our prefrontal cortex governs attention and executive functioning [38]. Despite media multitasking (i.e., referring to the simultaneous use of different forms of media) becoming a rapidly growing societal trend, processing multiple incoming streams of information is associated with a distinct approach to how information is fundamentally processed and stored. For example, one study asked participants whether they concurrently used other forms of media at the same time as the primary media, using qualifiers such as "most of the time," "some of the time," "a little of the time," or "never" [39]. This study found that heavy media multitaskers performed worse on a test of task-switching ability than light media multitaskers, likely due to decreased ability to filter out interference from the irrelevant task set [39]. However, other researchers found no performance differences between heavier and lighter media multitaskers [40].

Some argue that our ability to multitask is a "continuous partial attention" where the brain switches back and forth quickly between tasks, and the ability to focus on either task declines [39]. Given the potential for such inefficiencies and associated costs in healthcare, there needs to be a fundamental cultural shift and considerations as to how technology can improve efficiency rather than hinder physicians' daily practice [41].

Digital technology will remain an integral part of medical practice. If medical trainees do not learn how to concentrate and eliminate distractions, they could have a more difficult time succeeding at work [42]. In a study of 94 participants comparing heavy, intermediate, and light media multitaskers, the speed at which implicit learning occurred was slower in heavy media multitaskers relative to both light and intermediate media multitaskers [42]. Exercises that strengthen attention, like mindfulness practices, should be integrated into medical education curriculum. Some even advocate for a daily "digital holiday," when trainees are relieved from distraction by devices [43].

**Skill-Building Exercise**

If you have an important project deadline coming up, consider setting aside protected time daily to get work done. Create a "sanctuary" space where there are no distractions such as e-mail or phone. Allow for several hours of uninterrupted work.

## The Myth of Perpetual Digital Connection in Medicine

The modern work environment has been drastically changed by new modes of communication and information technologies. Physicians can feel overwhelmed by the pressure to respond at all hours, while burnout and other occupational health-related issues are on the rise [35]. Physicians are at high risk of losing the boundary between professional and personal life if this has not happened already. Mobile technology allows for remote working. Work commutes no longer disconnect us. Home and weekends are no longer a place and time to disconnect since physicians not only perform after-hours duty service, but now have access to information and work that were previously confined to the actual workplace. Digital connectivity may be an etiological factor in the erosion of leisure time. Most physicians use one smartphone for both their professional and personal lives. When physicians feel the need to be reachable on weekends, they feel obligated to verify messages in the event that anything "urgent" has come up. Work, therefore, has the capacity to follow physicians everywhere. Yet, although digital technologies have the potential to revolutionize healthcare by empowering clinicians to help them deliver the best care they can, only time will tell regarding how technology will impact on physician well-being and quality of life, but the data may be promising [37]. (See later in section "Check Your Learning," regarding further illustration of how potential digital tools could benefit physicians and their well-being.)

The "right to disconnect" is a human rights law that originated in France in 2017 [44]. It concerns the ability of people to disconnect from work and primarily not to engage in work-related electronic communications such as e-mails or text messages outside of working hours, although its utility remains to be seen [44]. Several other countries, primarily in Europe, are following France's model and granting their workers similar rights to disconnect, while in some cases this right to disconnect is present in the policy of large companies [44]. The responsiveness required of physicians beyond regular working hours necessitates further attention in addressing physician wellness and well-being.

Although it is tempting for governments to legislate a healthier approach to work and attempt to mitigate burnout, this remains a complex issue that goes beyond our dependence on digital devices. Real change is likely to result only when institutions prioritize physician experience as highly as they value productivity and patient experience. Only then will physicians and healthcare institutions be able to optimize their relationship, promoting realistic work expectations, and more supportive systems and technologies that are less draining and more fulfilling.

In the digital era, learning from the insights of disciplines outside of medicine is crucial to promote successful digital integration at all levels of modern health and educational organizations [45]. Successfully embracing ideas from outside of medicine and working with colleagues from other disciplines should be promoted to conduct collaborative research and develop integrated training interventions to best develop physicians for the complex, dynamic challenges of modern healthcare delivery [45]. In a recent review, Hategan and colleagues called for medical departments to start partnering with departments of computer science and other technical fields to foster collaborative opportunities, in which a designated technology center of a medical department could feature video-based visits, use of clinical simulators, application of virtual reality devices, and mobile apps, electronic/virtual consults, as well as yet-to-emerge technology [46].

**Skill-Building Exercise: The Digital Minimalist**

- Could you imagine yourself as a *digital minimalist*?
- How would you accomplish that?

Digital minimalism is an increasingly popular framework for thriving in the digital age where one benefits from being intentional about their adopted technology and abandons that which does not improve their efficiency or well-being [47]. To be a digital minimalist, one must first develop awareness of their relationship with technology. Screen time is defined as the time spent using devices such as smartphones, laptops, tablets, television, or gaming consoles. Smartphones remain the dominant device for consumer media, but criticism continues over screen time. Companies like Google and Apple have introduced screen time controls, but their effectiveness in changing consumer behavior remains to be seen [48].

**Did You Know?**

*For the first time, in 2019, US consumers spent more time using their mobile devices, predominantly smartphones, than watching television [49]. Smartphones account for 70% of that mobile device time. About 90% of smartphone time is spent in apps [49].*

**Key Point**

There are multiple apps available that claim to help curb social media use or to show how much time one spends on their smartphone, with the goal of helping build better screen time habits, block certain distractions, and become more productive, but their effectiveness in changing consumer behavior remains to be determined [50].

## The Future of Work: Deep Versus Shallow Work

Patients often present with complex, chronic illnesses and are increasingly better informed than ever before. However, the time allowed for a typical patient consultation has not concurrently evolved to match these developments. Furthermore, physicians face many organizational stressors on a daily basis, such as time spent on EMRs and other administrative tasks. How digital technology innovation could alleviate such pressures and enhance the life-work integration remains to be determined.

As discussed earlier, in addition to electronic medical education, physicians are being prepared to practice in an EMR-mediated world. While many physicians may feel optimistic about the overall benefits of EMRs, they can also feel unsatisfied with the data searches, non-intuitive and multi-click interfaces of existing EMRs [48]. Table 3.2 shows some design capabilities of future EMRs [48].

Efficient EMRs may need to promote "deep work" and minimize "shallow work" [51]. Deep work, a term coined by Newport, refers to tasks that create new value, push our cognitive capabilities to the highest, and are performed free from distractions [51].

**Table 3.2** EMR design for the next generation [48]

| |
|---|
| Not based on paper-chart model |
| Intuitive graphical user interfaces |
| Clinician approved |
| Complete access and use via mobile devices |
| Improved data entry applications |
| Extensive use of voice recognition |
| Measured reductions in clinician time |
| No data duplication across continuum of care |
| Improved computer diagnosis |
| Increased use in medical research and education |
| Increased use of cloud technology |
| Longitudinal based record (birth to death) |
| Not encounter or billing based |
| Interfaces for biosensors for improved patient monitoring |
| Big data storage and analysis for precision medicine and forecasting, predictive modeling, and decision optimization |
| Patient accessibility to personalized health record/information |

By contrast, shallow work encompasses all the little tasks that feel like one has to do *right now*, but in reality they are neither urgent nor especially important (e.g., checking e-mail, Facebook, Twitter, site stats, or sales stats). People experience both modes of work. However, in order to accomplish the important tasks, one needs to cluster together or eliminate as much shallow work as possible to not allow it constantly to interrupt the periods of deep focus. For example, as clinicians, we often go through our daily practice seeing patient after patient. But how often do we find ourselves absorbed in shallow work (e.g., unimportant tasks) so that we may feel like we have not accomplished much at all? Later in this text, the section "Case Study I: Learning in the Age of Digital Distraction and Hyperconnectivity" will further illustrate an example of how to balance deep and shallow work.

**Skill-Building Exercise: Pause and Reflect**

What opportunities do you envision with the use of technologies such as artificial intelligence (AI) in future clinical practice?

How could AI benefit:

- Your workflow?
- Your engagement with patients?
- Your use of diagnostic tools and decision-making approaches?

Artificial intelligence (detailed later in this chapter) will be an essential tool to increase efficiency of the medical system in the era of carbon footprint awareness and limited resources [52]. Projected savings with the use of AI are expected to be seen with the introduction of robot-assisted surgery, virtual nursing assistants, administrative workflow assistance, dosage error reduction, and fraud detection, to name a few [53]. Consider the potential for a shift from traditional healthcare delivery in a centralized "provider" model to a decentralized "patient-centered" model such as

in a community or home setting [54]. Given the connected nature of healthcare via emerging technologies, there are tremendous cost-saving opportunities. Beyond the boards of our more highly resourced healthcare system, AI also has potential to benefit global health and less resourced nations [55]. (Also see section "Artificial Intelligence Technology in Medical Education and Clinical Practice" for more details on opportunities of automation in healthcare system.)

As discussed earlier, in the medical field, we often find ourselves overwhelmed by a myriad of distractions such as EMRs, e-mails, text messaging, and social media. As physicians struggle to find adequate time in daily practice, they can find themselves easily caught up in distractions. Moreover, physicians risk feeling that they are always "on," needing to stay connected to work through the digital world, in a constant state of "working mode" as they battle the limited resource of time and a never-ending "to-do" list. This takes a toll on physician wellness, as work increasingly creeps into personal lives and change work-life integration and fulfillment. It is therefore not surprising that a key driver of physician resilience is occupational wellness. Some methods to escape the feeling of being "busy," yet seemingly accomplishing insufficiently, and some skills regarding the practice of deep work to promote physician wellness are illustrated in Table 3.3. It is essential to counteract the shallow work by accomplishing more

**Table 3.3** Strategies to develop deep work habits

| Strategy | Description |
|---|---|
| Adopt new routines and rituals | Retreat for long periods of time (3–4 hours) with no distractions to complete the task at hand |
| Be intentional toward achieving your set goals | Schedule your new routine by blocking out a period of time in your weekly calendar |
| Accept feeling of boredom | Embrace boredom and reject the "need" to constantly switch between tasks, which can lead to shallow work and unsatisfying outcomes |
| Consider a "digital holiday" regularly | Turn off any notifications, pings, or texts that will distract from your primary work. If needed, repeat this more than once a week consecutively |

deep work. This could be attained through the process of scheduling blocks of time to achieve one's most meaningful work. To attain contentment and wellness, physicians must be *intentional* and *focused*. Applying weekly deep work can make the difference between an unsatisfying and a more satisfying career.

## Artificial Intelligence Technology in Medical Education and Clinical Practice

The rapid evolution of medical education and the impending changes driven by AI technology and other advances require special attention. Medical educators need to understand how to integrate technology into current curricula, focusing not just on technologies of the next 5–10 years, but using strategic foresight to consider the implications of technology on medical practice within the next 20–50 years.

Educational leaders need to prepare medical trainees for practice in a rapidly evolving world of technology and AI. The medical practice of the future may be thought of as a trifecta of sorts, requiring the following:

- Integration of traditional medical knowledge and skill
- Business acumen
- Digital literacy as a part of core curriculum and learning objectives

Proactive changes to medical education are required to remain on par with technological advances, in anticipating a digital era that progresses with yet undefined boundaries [19].

**Skill-Building Exercise: Pause and Reflect**

Think about your technological footprint. What are the essentials of technology which you may require to perform your job efficiently? Beyond using a smartphone and a laptop, what else would you need for your job?

As noted earlier in this chapter, there may be tremendous time and cost savings with the use of AI, which includes better standards of care for the patient. Opportunities for healthcare automation are highlighted in Table 3.4 [56, 57], whereas a few facts about technologies that clinicians can adopt in their future practice are presented in Table 3.5 [58].

With AI, physicians may find many more opportunities to creatively respond to high demand for the "human touch," while employing services or tools to facilitate concentration and deep

**Table 3.4** Opportunities for artificial intelligence (AI) automation in healthcare [56, 57]

| Opportunity | Description |
|---|---|
| Speeding up administrative tasks | Minimize or even eliminate time-consuming documentation by healthcare providers using natural language processing to capture conversation and denote medical records more accurately |
| Automating routine tasks | Allow AI to complete daily, repetitive tasks such as reading radiologic reports, follow-up, and interpretation of laboratory results |
| AI nurses | Eliminate routine but important nursing tasks with the assistance of an AI robot to, for example, dispense medications in an accurate and timely fashion allowing the nurse to focus on higher yield patient care |
| Digital diagnosis | Use technology and big data sets to identify patterns provided by patient symptoms, past medical history, and diagnostic results to provide accurate diagnosis |
| Treatment design and precision medicine | Provide patients with a proactive approach to medical care by identifying preventive measures to conditions identified in, for example, their genetic code and suggest treatment options tailored to each individual |
| Drug selection | Use neural networks (AI technology that mirrors neurons in the brain and mimics how humans learn with the ability to see trends and retrieve meaning from data) to expedite the findings of new drug treatments |
| Robotic surgery | An enhanced robotic surgery assistant can perform with greater accuracy and sensing of nerves and vessels than a human. This technology can improve patient outcomes and speed recovery |
| Healthcare supervision | Use wearable technology to monitor patients and provide real-time metrics directly to patients and physicians, providing mitigation or early identification of acute health crises |

**Table 3.5** Types of technologies for physicians to adopt in practice [58]

| Technology | Description |
|---|---|
| Augmented reality | Use of augmented reality to educate medical trainees from the cadaver lab to the operating room, visualizing the body in 3D as an effective and risk-free learning tool |
| Telemedicine | Provide accessibility and timely healthcare consultation for the patients in the convenience of their home |
| Use of cloud and mobile devices | Through smartphone technology, cloud computing, and medical apps, both physicians and patients can access personal health information at their fingertips |
| Wearables and healthcare apps | Provide patients with wearables for monitoring and real-time feedback, allowing the potential to address medical issues before they become a problem. Real-time metrics available for physicians' review and diagnostic consideration |
| "Smart hospitals" | Smart hospital concept is aimed at creating IT environments that rely on optimized and automated processes of specialized and auxiliary procedures. It aims to improve patient satisfaction, optimize workflow, streamline communications with devices, such as sensors, building systems, and hospital electronic records, for more personalized patient care |

work to improve their occupational life. Physicians could benefit from a new philosophy of technology use to support their overall well-being: the concept of digital minimalism to overcome work-life disintegration accentuated by contemporary cultural and biological forces.

## Artificial Intelligence: A Solution to Improve Work Efficiency?

AI is not a new or novel technology. It has been in existence for years. Yet, the speed and capacity of systems in combination with the massive amount of data that currently exist make it a powerful

and transformative tool with potential impact to all industries, including healthcare. AI, in combination with machine learning, has the functionality to understand, reason, and learn using large data sets to support better decision-making and solve problems that could not be solved before with computational power and that far exceeds the capability of even the brightest minds.

With AI's ability to provide significant improvement in accuracy, speed, and consistency of patient diagnosis and treatment, it is not surprising that physicians are concerned with the potential impact it will have on their role and the patient-physician relationship [59]. As discussed earlier, some experts believe that AI will eliminate the redundant and repetitive tasks currently consuming the physician's time, thereby enabling physicians to focus more fully on the humanistic side of healthcare [60]. Physicians are currently bombarded with low-value administrative tasks to meet stringent policy regulations and minimize liability concerns. Conversational AI technology has the ability to eliminate the consuming hours required for EMR documentation. Using natural language processing (NLP), which is a branch of AI focusing on the interpretation and manipulation of human-generated spoken or written data, and natural language conversational AI, will automate documentation of the most relevant aspects of the care discussion, thus potentially increasing time and attention for the physician-patient interaction [61, 62].

Among the necessary but stressful aspects of medical training are the hands-on technical skill components of various procedures and surgeries. Although senior level oversight is in place for instruction and risk mitigation, there is always the chance of unnecessary errors and undo patient complications [63]. With the use of AI and simulation, medical trainees have the ability to practice in a highly realistic, yet risk-free environment. This advancement in technology provides medical trainees with less stressful options to perfect their technical skills and reduces or potentially eliminates risk of adverse patient outcomes. Later in this text, section "Case Study II: AI, the Modern-Day Stethoscope of 2050" illustrates an example of digital technology integration in medical education and healthcare delivery of the future, as well as its possible anticipated impact on the physician's life.

**Table 3.6** Key ethical and legal challenges of using AI in medicine

| |
|---|
| No clear rules on consent for data use |
| No clear rules on how patients can opt out during data collection and use |
| Use of incomplete/selective data, or misuse of data |
| Risks to privacy that can affect generations |
| Potential for bias and discrimination |

## Artificial Intelligence – Ethical and Legal Considerations

Key ethical and legal challenges of using AI in biomedicine, based on values of fairness, reliability, privacy, inclusivity, transparency, and accountability, are summarized in Table 3.6. With any significant transformation such as the use of AI in everyday medical practice, there are ethical and legal issues that need to be considered. For example, some studies have shown that tools such as IBM Watson for Oncology, which is a clinical decision support tool designed to assist physicians in choosing therapies for patients with cancer, may soon become the standard of practice [64]. Medical education which includes understanding the programming rules and algorithms utilized in AI machines will be essential for future practitioners to feel comfortable with these diagnostic tools. Moreover, medical legal discussion on liability when physicians are using these technologies must be clearly defined to protect all parties involved and requires further consideration. This reliance on machines will have implications for policy, ethics, and malpractice law [65].

## Check Your Learning

### Case Study I: Learning in the Age of Digital Distraction and Hyperconnectivity

Olayemi is a second-year family medicine resident who feels sluggish and as though he is always playing catch up with his work throughout the day. He finds himself running late to clinical

duties in the morning as he tries to squeeze in every possible minute of sleep, which also requires him to miss breakfast. He substitutes meals with coffee from the café in the hospital. He also feels distracted, using his cell phone to check social media accounts and e-mail between patients. As a result, Olayemi has recently struggled to complete his scholarly poster project for the annual research day at his university. With a nutritional deficit, distractions, and poor sleep regimen, Olayemi feels he is not as efficient as he could be.

Feeling like he is always in a rush and always exhausted, Olayemi talks about his struggles with his supportive girlfriend, Yuna. Olayemi decides it is time to make some healthy changes. They sit down and discuss small adjustments he can make to help him feel better and accomplish more.

Olayemi sets more regular sleep and wake times when he is not on-call, to ensure he is getting enough sleep. Given that he lives only a few minutes from the hospital, he decides to walk to work to enjoy some fresh air and quiet time to himself away from his mobile device before starting his busy day.

During his workday, Olayemi sets aside a 20-minute break during lunch to check his social media, texts, and e-mails (something that he called his "shallow work checklist"). Knowing he has carved out a specific time, Olayemi finds himself thinking less often about checking his accounts. In turn, he finds himself more engaged in patient care and is not struggling as much to keep himself on schedule.

Olayemi has one academic day per week and decides to put aside a specific number of hours on this day to work on his academic project. During this time, he turns off his cell phone and makes his scholarly work his only focus. He finds himself far more productive, despite spending fewer hours on his work.

As a physician, Olayemi understands the importance of healthy eating and decides it is time to follow the advice he gives his patients. He begins meal prepping on Sundays with Yuna, which is a way he protects quality time with her in his busy schedule, and it becomes a routine they both enjoy. Olayemi tries to cut out his daily coffee but realizes he misses it, so he decides to cut down to one cup a day. To prevent using a disposable paper cup every

day and contributing to hundreds of cups in waste, he brings his own mug that the café fills for him.

Within a few weeks, Olayemi begins to see positive results. He experiences more energy throughout the day and he is more productive. As a result, he is able to engage in additional research activities within his department, something he finds himself relishing. Focusing on only the task at hand, carving out time for activities he finds important, and planning ahead for a healthy week, Olayemi feels much less overwhelmed and worried about playing catch up with his sleep and at work.

***Question 1.*** **Climate change has been shown through various measurements to have a negative impact on health. Reducing one's carbon footprint with less environmentally harmful practices is something everyone can do every day. In what ways Olayemi has reduced his carbon footprint?**

A. **Walking to work**
B. **Using a mug for his coffee**
C. **Meal preparation at home**
D. **All of the above**

**Answer: D** ✓

*Olayemi has demonstrated various ways to reduce his carbon footprint. Although he has changed his day to day routine to improve his sleep and efficiency, in turn he has also chosen methods that are more "green" in nature. Commuting to work* via *walking or riding a bicycle is feasible for Olayemi as it saves him money on gas and less wear and tear on a vehicle, promotes physical exercise, and also reduces his carbon footprint. There is currently a throwaway culture that increases one's carbon footprint* via *buying disposable utensils and containers for food and drink. Olayemi was throwing away multiple cups a day until he switched to using a mug. This not only allows him a reusable container that holds more volume of beverage, but it further reduces his carbon footprint. Meal preparation not only reduces the use of containers, papers, and utensils disposed from purchases "on the go", but also allows more control of the nutritional content of his meals while*

*minimizing his carbon footprint. As discussed earlier, processed foods have been associated with adverse health outcomes* [5].

***Question 2.*** **The ability to focus when distracted and perpetual digital connection can go hand in hand. Olayemi has targeted these aspects of his day to day function. Which potential adverse outcomes should Olayemi be concerned about if he does not make some changes to his routine?**

A. **Perpetual inefficiency**
B. **Burnout**
C. **Poor work performance**
D. **All of the above**

**Answer: D** ✓
*All of the above are potential outcomes if Olayemi does not make healthy changes to his routine. Poor sleep and frequently checking his mobile device lead him to pay less attention to his daily responsibilities. Scheduling out time to address e-mails, texts, and social media can help reduce his distraction and enhance his ability to be more efficient during the time set for work on his projects. Feeling pressure to respond immediately* via *electronic communication impacts our ability to focus on work and to disconnect from work! This may eventually lead to feeling overwhelmed and then to burnout. As discussed previously, the "right to disconnect" is a human rights law developed and used in other industries, which could be adapted and integrated into medical systems as a stepping stone toward improving the wellness and resilience of physicians* [44]. *In addition, there are apps available showing us how time is spent on our smartphones, which might help limit screen time, block distractions, and boost productivity.*

## Case Study II: AI, the Modern-Day Stethoscope of 2050

Imagine Julia, a third-year internal medicine resident in the year 2050. Her duties include supervising junior residents for the third consecutive month on an inpatient unit at a tertiary care hospital

and providing virtual care for cross provincial referrals. Julia cares deeply about her patients. In order to keep up with the demands, she has been sleeping fewer hours (about 5.5 hours a night) for the past 3 months. She has the ability to leverage a robotic physician to interact with her patients from the comfort of her home during her night call duties for the hospital. Despite this, her sleep continues to be disrupted and anxiety heightened anticipating these complex cases. A typical day for her starts at 5:45 AM. She turns off her alarm clock, displayed as a digital time overlay built into a special pair of glasses that she wears at night; these glasses also have the capacity to display a video to assist through deep breathing and relaxation exercises for stress relief in order to promote a more optimal sleep. Despite this, she starts her day with feelings of anxiety as she reviews more than 50 alerts from her virtual care patients' wearable devices and home monitoring systems. After getting ready for work, she accompanies her morning coffee with verbal dictations for treatment plan adjustments using connected mobile apps; she tailors treatment protocols as suggested by the program. As she makes her way to the hospital in her driverless electric car, she continues to review diagnostic results from her inpatients in anticipation of questioning from her attending physician at morning rounds. Given the use of home monitoring devices and personalized scanners, only the most complex patients are treated in hospital. As Julia and her team meet with inpatients during morning rounds, she struggles with the desire to empathize with her patients and their family caregivers, often wishing to express how deeply she understands their suffering. For fear of being seen as "too close" to her patients, and thus fearing judgment of being "unprofessional," she avoids sharing her feelings not only with patients but also with her peers, although this leads her to feel more disconnected from herself and her work.

With the use of conversational AI, relevant progress notes are automatically documented based on the discussion between Julia and her patients, taking away some administrative burden; yet, Julia feels that "big brother" is always monitoring, adding to some

anxiety. Much like the everyday use of the stethoscope in the twenty-first century, Julia has the ability to tap into cognitive computers including AI, machine learning, supercomputers, and predictive analytics as everyday tools that automate complex decision making with big data. The resources to which she has access span geographic boundaries, consisting of the most up-to-date global research evidence. Given her perfectionistic ways and desire to provide her patients with the best standards of care, she recently subscribed to a publication that details the latest emerging medical technology.

But Julia soon begins to feel incompetent, overwhelmed by the inability to "keep up" with her reading, and she becomes increasingly critical of herself. Although she lives in a century that is more connected than ever, even having the ability to speak with her family halfway across the country using holographic telepresence, she frequently "runs out of time" to connect with her social supports outside of work. For this reason, she feels she has more detached responses toward others, which alienated her from a few friends and family recently.

While initially hesitant, Julia decides to access counseling services through the local resident affairs wellness center. There, she endorses feeling constantly fatigued and that she finds it a burden to engage with her patients. She denies feeling depressed, anhedonic, hopeless, or suicidal but does disclose feeling anxious about entering the hospital each day and dreads the constant bombardment of information to her mobile device, anticipating something will be overlooked and inevitably goes wrong under her care. She is sleeping less lately, despite implementing digital mindfulness exercises. Notwithstanding her sleep being already disrupted, she often finds herself drinking two to three glasses of wine to fall asleep. Julia is hesitant to further engage with a mental health clinician, but she is interested in using additional virtual reality tools in the comfort of her own home, which will initially focus on assistance with regulating her sleep and assist with her anxiety symptoms. She thought: "If I just survive this year of residency, I will be fine and I'll regain control over my life."

***Question.*** **Although few would dispute the substantive positive impacts that technology will have on prevention, personalized medicine, diagnosis, and treatment planning for the patient, what digital tools could benefit physicians like Julia who may experience physician burnout?**

A. **Virtual or augmented reality**
B. **Conversational AI**
C. **Technology to support work from the comfort of physician's home**
D. **All of the above**

**Answer: D** ✓

*Recognizing the signs and symptoms of physician burnout is discussed elsewhere in this volume (see Chap. 10, Recognizing Compassion Fatigue, Vicarious Trauma, and Burnout). However, most of the physicians should be able to recognize that the persistent feelings of being work overloaded, unsatisfied, isolated, and unappreciated in professional life may be symptoms of burnout, as in Julia's case* [66]. *Persistent burnout should prompt clinicians and organizations (as described elsewhere in this volume; see Chaps. 17 and 18) to further develop strategies that promote workplace engagement, job satisfaction, and resilience, which includes efficient and ecofriendly technology use.*

*As technology continues to "disrupt" medicine for the benefit of the patient and systems, physicians must be proactive in advocating for technology to help themselves in their medical practice, reset workplace and personal expectations, and adopt healthier attitudes. As with the digital transformation, there must be a cultural change establishing a new dynamic between the patient, physician, and technology with the fundamental of humanistic connection in place for both the patient and physician.*

*Future tools such as virtual or augmented reality may become the gold standard treatments in supporting sleep or anxiety disorders, similar to Julia's case* [67]. *Technology, such as conversational AI, has the potential to decrease administrative burden for physicians of the future; however, there are ethical considerations that needs to be further addressed* [68]. *The attempt to automate*

*and reproduce intelligence in medicine is, at its best, probabilistic and not deterministic* [68]. *Similar to considerations of autonomous vehicles, there is the question of who is morally responsible when a medical adverse event occurs. The dilemma still remains regarding how it is determined where responsibility or accountability lies, the role of humans in the AI decision-making process, defining the responsibility of the physician relying on AI, the hospital providing that technology, the software engineer behind the technology, and the corporation commercializing it* [68].

*Moreover, virtual medicine, home monitoring devices, and wearable technologies will minimize the need for centralized care within the hospital. This will reduce unnecessary visits for the patient while allowing physicians to work in the comfort of their homes, which in turn may accommodate the physician's busy schedule and promote an environmentally friendly ecological footprint. Although working from home has the potential for system cost savings, this has the strongest possibility for blurring the lines of personal and professional lives for physicians by bringing their practice more notably into their home, and this needs sensible consideration.*

*In summary, these are all examples physicians should consider among the introduction of emergent technologies in order to optimize efficiency and improve physician well-being, and thus the correct answer is D. (See also Table 3.5 for other technologies with potential usage in the future of medicine.) Physicians of the future must leverage the emerging tools to work smarter and not just harder! Burnout will be a continuing theme in the future of healthcare if culture change is not championed as medical technology inevitably continues to transform healthcare.*

**Key Takeaways**

- The healthcare system contributes to the increasing global carbon footprint, but there are feasible ways to reduce this [5].
- Given the growing evidence that climate changes have the potential to adversely affect health, medical schools should incorporate curricula to reflect the health risks

associated with a changing climate [69]. In this view, an increasing number of medical schools are implementing changes to their curriculum to incorporate timely and current content [69].

- Integrating climate change topics into medical curricula provides an opportunity to develop awareness and skills needed for practicing medicine in a humanistic manner and in a climate-changing world.
- Physicians are being increasingly called upon to engage in skillful adoption and integration of technology in a rapidly changing ecofriendly digital world.
- The argument for using digital technology to provide healthcare is immutable and a vision of medicine's future is optimistic. Technological advances are changing the way medicine is practiced and the way physicians interact with patients. Finding a way to deliver optimal face-to-face humanistic care, while living in a digital world, will transform the way physicians work in the future.
- With technological advances come potential distractions, and medical trainees need to learn how to focus and eliminate these by building exercises that strengthen attention as part of the curriculum.
- Digital technology allows the ability to stay connected to work more easily and continuously, which in turn could perturb work-life integration and lead to burnout. "Always-on" behavior can be detrimental to well-being, and physicians need to learn how and when to hit the pause button.
- Artificial intelligence (AI), although not a new technology, is being used more in medicine but there is concern that it may reduce the humanistic approach [59, 60].
- The benefits of AI may be such that physicians are provided training and practice in a risk-free, highly realistic environment with the opportunity to trial various case scenarios and a less stressful method to enhance skills.
- With new technologies, there will be new medical legal implications for liability which will govern new policy on the ethics of reliance on machines [64, 65].

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# 4 Physicians with Children: Nurturing Humanism and Returning Joy to Medicine

Caroline Giroux, Suzanne Shimoyama, and Danielle Alexander

## The Mother-Doctor Paradigm

The authors will share reflections that draw upon their own experiences, understanding the potential for personal bias, limitations to generalizability, and inapplicability to some individual situations. The ways that life can turn 'upside down' are limitless. For example, the authors had their children at different stages of training and career, although they are of the same gender and work at the same institution. They also all identify with the *mother* role specifically and ask that the reader forgive the inherently binary nature of the word. Some readers will be fathers. Many readers will identify with more inclusive terms such as "parent," "caregiver," or "step-parent." Despite these limitations, the authors believe that there is value in sharing reflections and resources if

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only to inspire a similarly beneficial self-examination among others. After all, humanism is a self-driven process. The authors have at least one characteristic in common with the reader: a desire to successfully navigate life's most salient challenges in the simultaneous role of caretaker to both society through their work with patients and to their children. To be a mother/father/parent/caregiver and a physician in training at the same time is the subject of this chapter.

Some may take issue with the idea of juxtaposing or comparing patients and children. "I keep my work life and family life separate!," some might think. The authors agree that boundaries are essential. At the same time, they hope to contribute to a body of knowledge by expressing how these roles and worlds intermingle, effect, and linger, potentially for the betterment of both. They will attempt to capture in case-based examples and their own disclosures that the challenges of parenting during training and beyond constitute an under-recognized but commonly experienced struggle. Yet, as they explain, there are ways in which each role can complement the other: parent-doctor, doctor-parent.

There are only two certainties in the sequence of events of one's existence: birth and death. As to what happens in between these two events, one can expect the constant challenge of navigating various changes and life demands, both anticipated and unanticipated. Physicians are by no means different from the rest of the world in this reality, even though some might subconsciously hope to defy death by saving others, hence saving themselves from the inevitable. In our opinion, and based on observations of various permutations of human suffering, attempts to exert control (a trait highly valued in medicine) are bound to fail and invoke distress sooner or later.

## Physician Experiences in Becoming a New Parent

This section highlights how each of the authors navigated the complex challenges associated with motherhood and doctoring. Later in the chapter, fictitious vignettes (inspired by real facts and situations) will be presented to the reader to consolidate learning.

## Case Study 1: *Caroline*

Caroline married during her last year of residency and then became a mother just a few months after starting her career as an inpatient psychiatrist; as such, her physician persona was developed first, prior to her persona as a parent. The role of physician had been integrated more deeply in her self-concept, so that medicine had to make room for marriage, and later on for motherhood. In other cases, parenthood is established first and later has to make room for medicine. Caroline's physical environment, her time, and above all her cognitive and emotional realm had to free up space and energy for the additional needs of partner and child.

Caroline had learned to do what is often expected of physicians: to follow guidelines and algorithms. Even though medicine is a beautifully inexact science, uncertainty is not easily tolerated and therefore physicians may encounter difficulties when complex questions summon answers that do not necessarily exist. They might even feel like they are not qualified for the task and that they ended up being admitted to medical school not based on their hard work and skills but from mere luck. For many in medical training, imposter syndrome becomes a reality; in a study of US medical students, one in two female students reported imposter syndrome compared to one in four male students [1].

Meanwhile, during the decade of hard work and sacrifice spent earning her MD degree and specialty certification, life continued along a different trajectory for many of Caroline's non-medical and non-professional peers. Suddenly tired of "trailing in terms of traditional adult milestones," she wanted to feel connected, be part of the group or "normal people," have companionship and a child to hold and rock to sleep, and to join the celebration of life. Some people experience blissful moments that have a taste of eternity, such as a fulfilling partnership or the arrival of a child. At other times, difficult reality hits hard, like in the context of a miscarriage. People move away, they lose loved ones, and domesticity can become alienating. Menial tasks both at home and at work risk the erosion of parental and physician joy and meaning.

Treating severely ill patients at work while maintaining breastfeeding can be challenging. Breastfeeding and pumping breast milk might feel like a utopic form of love in the eyes of the mother, or appear like a nuisance, almost shocking, in the eyes of others, in spite of the well-established benefits for both mother and child. To continue providing ideal nourishment to her child with breast milk, Caroline was willing to pump her milk in varied and public settings; she can still remember sitting behind a dirty paravent in the staffroom of a prison medical unit where she was working at that time, in order to pump breast milk, trying to not think of disturbing stories of stolen milk shared by a female security guard. Over time, Caroline's ego ideal became deflated: she felt that she could not optimally nurture everyone (i.e., child, spouse, patients). Physicians are human, and there is no oversimplifying the challenges they face in trying to integrate the demands from home life and physician life. There is always something else (a hobby, a relationship, a passion, a priority) in the person's life that was there way before one chose medicine. Caroline calls it the "essence." She believes the essence is her true self, often sacrificed during training years to fit the mold of medicine and what society expects a physician to be. Gradually, defense mechanisms are deposited like layers of sediment on one's identity in order to deal with pain, death, loss, and tragedies of all kinds.

It is Caroline's belief that women in particular can be plagued with guilt in trying to juggle the demands of family, household, and profession [2]. The "superwoman" expectation to do it all and do it well catches women in a paradoxical double-bind: society may encourage women to become educated and contribute to meaningful work, but may send a contradictory injunction to avoid being "too" ambitious, such that workplace duties don't interfere with their parenting role. On the flip side, professional expectations and opportunities might be suppressed, so as to prevent potential and presumed interference with personal commitments. For a while, Caroline herself believed in the myth of the "supermom," reactivated in school meetings where other mothers looked happy in their lives, with perfect makeup and eagerness to volunteer to chaperone every field trip. Caroline's makeup was not only imperfect but it was also nonexistent! She felt she had no

time for grooming with minimum style or actually brushing her hair, and even less for trips to the zoo with a bunch of loud first graders.

Caroline could not stress enough the importance to her of grieving the illusions of "perfect" parenthood and an "outstanding" medical career. The book "The Mother Dance" by Harriet Lerner helped Caroline challenge the idyllic, misleading vision of motherhood in a unique, delightfully humorous way [3]. Once Caroline embraced the discovery that life does not usually unfold as planned or dreamed; she was relieved and pleased to see the bidirectional relationship between parenthood and medicine (once a more regular sleep schedule was in place): they somehow seemed to feed each other. Especially in her work as a psychiatrist and psychotherapist, it is impossible for Caroline to ignore the importance of secure attachment during infancy and early childhood. Learning from her patients' own relationships with their parents has been especially helpful to her in remaining aware of parenting attitudes. Conversely, bonding with her own children taught her a deeper level of love and compassion she could try to extend to and model for those she cares for in her professional life.

## Case Study II: *Suzanne*

The timing of pregnancy can be tricky for any parent; however, fitting a pregnancy into a career can be especially challenging for medical trainees and physicians. Suzanne decided to apply to medical school in her mid-thirties after a career in the entertainment industry. She married during her second year of medical school, and because she was already 36 years old, she wanted to start a family as quickly as possible. She became pregnant as she was preparing to take the USMLE Step 1 board exam and sat for the exam with a testing-center approved trashcan by her side, given her symptoms of hyperemesis. Her pregnancy progressed during her first clinical year. She felt her medical school was supportive of her pregnancy and did what they could to optimize her schedule in consideration, front-loading the more physically

taxing rotations like surgery where she was on 30-hour call every 4 days, and saving outpatient rotations for post- delivery. Her medical school offered her the opportunity to take several months off postpartum, but because that would have "set her back" a year in applying to residency, she opted to take only 4 weeks off before returning to her clinical rotations. This was her first pregnancy and she had little understanding of how she would be impacted by such a short maternity leave. After delivering a healthy baby girl, she was physically able to return to her clinical rotations, but found it a much bigger struggle emotionally than she had expected. She was overcome with guilt about leaving her infant at home to be cared for by their father and grandmother, even though Suzanne recognized how fortunate she was to have trusted family members available and willing to help. She worried constantly about her daughter being able to securely attach to a mother who was with her for just a few short hours each day. The rest of the year was a blur to Suzanne who was sleep-deprived and juggling clinical duties, exams, the USMLE Step 2 and applications to psychiatry residencies. She pumped breast milk in bathrooms, supply closets, and her car, as the main hospital was the only rotation site with a dedicated lactation room. When her milk supply unexpectedly dried up and she had to prematurely stop breastfeeding, Suzanne felt like a failure. With her mother and husband providing so much of the day-to day caregiving, breastfeeding had felt like the one special thing that she alone could give to her daughter.

Over the past few decades, the average age of matriculation to medical school has been increasing. In 2018, according to the Association of American Medical Colleges, the average age for both male and female registrants was 24 years [4]. Female physicians are now entering residency during their peak reproductive years. Many are faced with the dilemma of whether to have children during training or to delay pregnancy and face the risk of decreasing fertility and increasing pregnancy complications post-residency [5]. Willett and colleagues found that compared to male residents, more female residents planned to postpone childbearing during residency, and the most salient reason for this was the perception of career threat. "Career threat" included concerns for extended residency training, loss of fellowship position, pregnancy complications, or interference with career plans [5].

As a current attending physician, Suzanne has worked with many residents and medical students who have pursued pregnancy and parenthood while in training. Until recently, there was no clear maternity or parental leave policy in place at her institution, so each had to reinvent the proverbial wheel to arrange details for her own leave. While many describe relying on supportive peers, senior residents, and attendings, others have had to deal with microaggressions and even overt discrimination. One trainee disclosed that a male mentor questioned the timing of her pregnancy and expressed that he felt it was poor judgment on her part to have a child at this point in her training. Similarly, female mentors have expressed such concerns to their female mentees as well. Physicians have reported being asked in subtle and not-so-subtle ways about their reproductive plans while interviewing for jobs, even though this line of questioning is discouraged in the USA by the EEOC (Equal Employment Opportunity Commission) enforcement guidance on pre-employment disability-related inquiries [6] and violates human rights legislation in Canada. From her position as a supervisor, Suzanne has observed the subtle ways in which female trainees who are parents may be perceived as less capable compared to their male parent peers. She recalled one time at a conference that a male physician presenter suggested that telemedicine was ideal for female physicians because female physicians prefer to work part time and be at home with their children. Even though Suzanne recognized that this statement might have been well intentioned, in reality not only did this perpetuate a toxic and inaccurate stereotype (that female physicians are less ambitious than their male peers [7]), but it was also a disservice to fathers who may pursue similar arrangements to enhance integration of career and family.

## Case Study III: *Danielle*

Danielle had her children during residency. Her life unfolded between 24-hour calls, jam-packed clinic schedules, and overdue inbox messages. During pregnancy she would sometimes come home with little energy left to give her personal life. She needed lots of recuperation time in the evening. Fortunately, she

could mostly keep up. But her nausea did not improve and she decided to postpone more rigorous rotations until later in pregnancy. Kindly her department was able to make the adjustments; still, the stress she experienced in pursuing these accommodations was difficult for her. Researchers have explored perceptions of pregnancy and parenthood during residency. A study by Collier and colleagues surveying US medical residents found that of the female residents who responded to the survey, 28% reported perceived faculty pressure to delay pregnancy and 52% felt that peers were resentful about their pregnancies and maternity leaves [8]. Sandler and colleagues surveyed U.S. general surgery residency program directors nationwide and found that 61% felt that pregnancy negatively affected the work of female trainees [9]. In comparison, they were much less likely to report that parenthood negatively affected male residents' work (34%) [9]. In this same study, 15% admitted that they would advise residents to avoid having children during training [9]. Interestingly, a systematic review by Humphries and colleagues found that in spite of the perceptions that pregnancy negatively affects the work of female residents, multiple studies have shown just the opposite [10]. One of the studies they reviewed showed that obstetrics and gynecology (OB-GYN) residents who were pregnant during training did not complete a significantly different number of cases than their peers [11]. Additionally, the academic productivity of pregnant otolaryngology residents did not appear to differ from their peers [12]. A retrospective study of general surgery residents found no significant difference in board pass rates, service scores, and total case numbers between residents with and without children during training [13]. Another study found no increased risk of attrition among residents who bore children during training [14]. In the literature describing pregnancy and parenthood in residency, many authors recommend the need for formal parental leave policies throughout graduate medical education [10, 15–17]. Others suggest innovative approaches to graduate medical training including shared or part-time training options or competency-based requirements for graduation rather than a required number of hours spent on rotations [15, 18].

Ultimately, residents who are pregnant or parenting must deal with a unique set of challenges in the context of long work hours, on-call shifts, physically and mentally demanding work, and a high-stress environment. One might think that this would lead to an increased level of burnout, job dissatisfaction, or diminished humanism; however, studies do not support this. Collier and colleagues found that 41% of medical residents without children reported higher levels of cynicism, a core symptom of burnout, than their colleagues with children [8]. In the same study, 27% of residents with children reported increased feelings of humanism compared to 23% of residents without children [8]. Interestingly, a study looking at burnout among internal medicine residents found that parenthood appeared to both contribute to and protect from burnout, potentially increasing stress, while also providing a humanizing benefit [19]. These authors report that previous studies have shown similar equivocal patterns and hypothesize that "it is not the presence of a spouse or children in a resident's life but rather the quality of those relationships that is important" [19].

## Finding Joy in Medicine

Life can at times be unpredictable; one way to cope with both its expected and unexpected realities is a set of principles rooted in a core value accessible to all: *joy*. Joy is abundantly connected with one's essence or true self. Danielle LaPorte wrote, "Joy is what happens when you make contact with your Soul" [20]; when one engages in activities that resonate with their essence, it has the potential to produce joy. Joy is not the same as happiness. Happiness is like good weather [20]. It is the "billowy clouds floating in the sky" [20]. Joy is like "the whole sky itself," "from sunshine to tornadoes" [20]. Happiness may come and go, but joy is perpetually present [20].

Joy is generally contagious. It bonds people. There is a neuroscientific understanding of joy in the literature. One study looking at the functional role of auditory cortical regions in emotion processing found functional connections that are emotion-characteristic in that they are stronger during joy than fear, or vice

versa [21]. Practicing activities that help us cultivate joy is not only an art or a science but it is also a philosophy; Spinoza, Nietzsche, and Bergson were the so-called joy philosophers [22]. In an era where medicine is rapidly evolving and physicians at times struggle to find meaning, these chapter authors believe that physicians need a culture shift that will force re-examining values of medical practice. What gives physicians joy also energizes. For example, some physicians have discovered that volunteering in free medical clinics has given them joy. There are as many unique possibilities for sources of joy as there are unique people. Sometimes simply being open to the potential for joy can ease hardships. One of the authors reminisced that when her second child was born in residency, adjusting to being a family of four was difficult in ways she had not anticipated. She took solace in the sunshine out her window, her sleeping infant, and the house's quietness while her toddler was in day care.

Reminding oneself to be present in the moment is an important precursor to joy. How can one experience joy if distracted, ruminating about the past or apprehensive about the future? Being in the moment allows one to "touch eternity," as Frédéric Lenoir wrote in his book "La Puissance de la Joie" [22]. Lenoir lists some accessible means and attitudes to enhance joy, such as practicing mindfulness or full attention, gratitude, and letting go (see Table 4.1). Acceptance is one of several desirable mindfulness qualities or manifestations [23]. When people are able to pause and be mindful, they are more likely to accept and welcome the situation as is. Acceptance is contrasted to attempts to manage, change, or control events that are beyond one's capable influence. In such instances where one does not have control to effect positive change in the situation, one benefits by accepting (rather than managing), thereby letting go of futile attempts to counteract, control, and change that cannot be otherwise altered. These concepts related to difficult thoughts and emotions are explored more fully in Chap. 9, *Cognitive and Mindfulness Conceptualization*.

In his book "La Puissance de la Joie," the author points out that joy is not often addressed in the literature [22]. In fact, only a few philosophers have examined it over time, which is interesting because according to the author and many others, "joy is the

**Table 4.1** Examples of mindfulness qualities

| Mindfulness qualities | Definition |
|---|---|
| Acceptance | Seeing, feeling, and acknowledging things as they are in the present moment. It is not synonym of passivity, resignation, or agreement. It allows a clear perception of the present that informs our actions. |
| Empathy | The quality of feeling and understanding another person's situation in the present moment, inclusive of their perspectives, emotions, and actions. |
| Generosity | Giving in the present moment within a context of care and compassion, without need for gain or return. |
| Gentleness | Consideration and tenderness; it is not passive or indulgent. |
| Gratitude | The quality of reverence, appreciation, and thankfulness for the present moment. |
| Letting go | Allowing change to occur by not holding on to thoughts, feelings, experiences that are no longer useful. However, letting go is intentional and does not mean forgetfulness or suppression of thoughts or feelings. |
| Non-striving | Remaining unattached to outcome or achievement; not forcing things by holding on or pushing away. |
| Openness | Perceiving things as if for the first time; remaining aware of attitudes and opinions that may block openness in particular circumstances. |
| Patience | Allowing things to unfold in their time. |
| Suspending judgment | Impartial witnessing; observing the present moment by moment without evaluation and categorization. |
| Trust | Trusting oneself, one's body, intuition, emotions as well as trusting that life is unfolding as it is supposed to. |

motor of life"; it is what people seek. Even (and especially) in highly demanding or challenging situations, or in the midst of grief, it is helpful to look for and find joy to replenish emotional and physical reserves [22]. Seeking opportunities to laugh will also boost the immune system and defuse some emotionally charged situations [24].

The chapter authors are of the opinion that finding the beauty in the spontaneous, wholesome, or even the mundane can bring surprising amounts of joy. For many, some of the smallest and

simplest occurrences of everyday life have the potential to provide moments of joy (e.g., sunrise, holding a warm cup of tea, feeling the fresh breeze on our face, the crackling sound of autumn leaves underfoot). And such reserves allow us to face life challenges; at the same time, we will likely devote a lifetime, seeking to developing a sense of identity while decoding or unpacking a complex culture (our own), itself a medley of many sub-cultures, while evolving in a broader social context. Finding joy and decoding (our emotions, our place in life, our culture) are equally important skills to successfully navigate demanding caretaker roles in the lives of physicians, including physician parents. In order to care for loved ones and patients, physicians must also be effective caretakers of themselves. They must value and prioritize their own personal needs in the same way that they value and prioritize those of their children, partners, and patients.

**Key Point**

Residency is a time where trainees have less control over their busy schedules; resident parents may have even less time to focus on their own self-care. It is important to remember that it is not the *amount* of time spent but rather the *quality* of the time spent on an activity (e.g., be it parenting, connecting to loved ones, participating in activities that bring us joy) that matters [19].

## Tips and Tools

This section aims to share with the reader some epiphanies and tools that emerged as beneficial during the course of the authors' professional and parental growth and development. Unless stated otherwise, this content is based on authors' opinions, personal wisdom, or specific experiences and, therefore, might not apply to all settings, situations, or specific challenges a physician is

experiencing. It is more intended to inspire the development of a similar process rather than to prescribe a rigid approach. All modalities should be individualized and contextualized.

## Lifestyle Hygiene: Choose Healthy Nutrients for Your Body and Mind

"Lifestyle hygiene" appeared as an expression to one of the chapter authors as she was working as a member of a well-being committee. She thought it encompassed what she was trying to convey quite accurately: it could be conceptualized as a set of practices that aim to maintain a healthy body and mind. It is a lifelong contract with oneself to support living life fully and authentically. Lifestyle hygiene consists of self-care and universal, basic, non-negotiable needs such as nutrition and sleep (see Chaps. 12, *Healthy Lifestyle Behaviors: The Optimal Nutrition to Combat Burnout*, and 13, *Healthy Lifestyle Behaviors: Sleep to Remain Well Around the Clock*). In this author's opinion, while self-care and "lifestyle hygiene" apply to everyone, self-preservation is more specific because it is about being connected to one's "essence" and with the resulting experience of joy. Based on her experience and observations, she found that the essence or self-preservation activities make people more likely to pause to enjoy a pleasant experience, hence boosting mindfulness. In turn, mindfulness promotes self-care and boundary-setting by increasing awareness of the body's fundamental signals (e.g., hunger, thirst, fatigue) and the importance of health. By using the analogy of mindfulness as a battery or solar panel (Fig. 4.1), physicians can maximize the overlap between self-care and self-preservation and the potential of leading a healthy and joyful life.

## Make Room for Your Emotions

Medical training often reinforces stoicism and disconnection from emotional experiences. But learning to cope with difficult emotions first requires that one recognizes them and subsequently

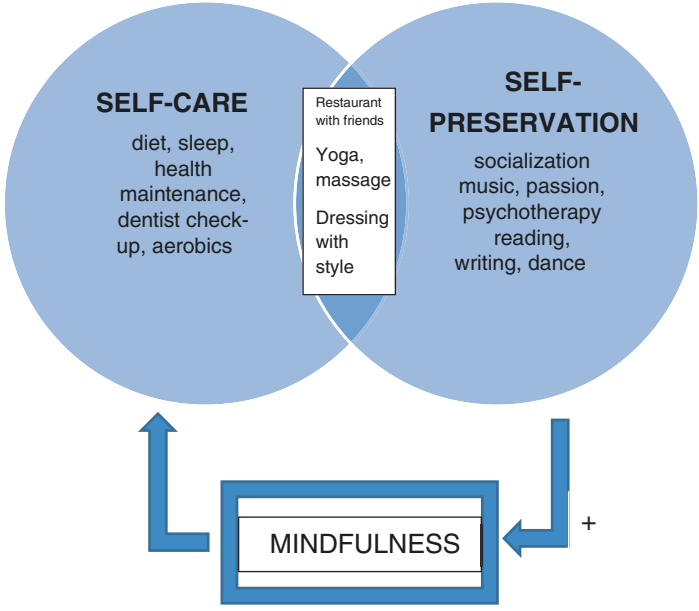


**Fig. 4.1** Example of a lifestyle hygiene diagram

accepts them (not judging them as they occur but allowing their presence as an observer). Learning these skills creates a foundation for affective regulation. Sometimes there can be fear associated with acknowledging and experiencing difficult emotions – fear about how one will cope and whether one will be able to move past the difficult feelings. But acknowledging and accepting difficult emotions such as sadness or anger does not imply that one is dwelling in such a state, nor that these feelings will amplify. In fact, acknowledging and accepting difficult emotions without judgment actually helps facilitate processing and moving on from the difficult feelings. In some cases, personal and professional counseling supports will be of benefit in developing such skills and working through this process.

For the busy physician, caretaker of society and family, when is there time to recognize personal emotions? Referring to a vignette shared previously, as a new graduate working in a busy

outpatient clinic, one of the authors and her physician husband both worked full-time while raising two children under the age of four. During this time, she often experienced her emotions as if they were "attacking" her ability to "do it all." This was quite contrary to the practice of "accepting and not judging," as discussed earlier in this chapter. The advice in this chapter is certainly easier said than done! What has helped this author is nurturing professional and personal spaces around social connections, ideally integrated spaces that feel both private and public. For example, one author meets regularly with work colleagues after hours to share stories about work and family life challenges and integration. It is a refreshing blend of social support and gaining practical wisdom. Similarly, a monthly lunch meeting with colleagues around a shared professional interest provides a venue for expression of important ideas, issues, and problem-solving strategies. These engagements have fostered self-reflection, expression, and discovery. Remember, there is no bad emotion: feelings are a compass that bears a message, a pointer to something that needs to be attended to and corrected. *Listen.*

### Case Vignette: *Katelyn*

Katelyn and her husband had been trying to have their first child for several years without success. Finally, during her second year of training as an internal medicine resident, Katelyn was delighted to learn that she was pregnant. She was in the midst of a taxing night-float rotation on wards with a busy service and full list of patients, working twelve hours a day. During an early OB-GYN appointment, Katelyn was able to see the fetal heartbeat. As a physician she knew better than to become too attached this early in her pregnancy but could not help making mental plans for becoming a mother and bringing a new life into the world. Although she was beginning to experience symptoms of morning sickness, Katelyn continued to push herself at work, admitting patients and tending to their emergent needs. When she returned to her OB-GYN for a follow-up visit, the heartbeat was no longer present. She was devastated. In addition to the profound grief from losing her pregnancy, she also had to cope with the hormonal crash that occurs when a pregnancy suddenly ends. She tried to keep her emotions in check while caring

for patients and supervising more junior learners, while running in between to the bathroom to manage the bleeding. She did not feel comfortable sharing this extremely personal experience with anyone other than close friends and family and worried about how the news that she was trying to become pregnant might impact her prospects of applying to a fellowship program. Like so many other women who experience miscarriage, in many ways she suffered alone in her workplace.

Whether it is miscarriage, or a different personal loss such as a death or the end of a relationship, many resident physicians may struggle with grief during their training, and yet frequently feel safer in keeping these feelings to themselves. While emotional compartmentalization can be an important tool in the demanding career of a physician, it is the authors' belief that ignoring difficult and painful emotions does not promote their resolution [25]. Those who work with survivors of trauma observe this frequently; due to the difficult emotional process of working through trauma, survivors sometimes try to forget about it, putting it in a "box," which is a defense mechanism called repression. The challenge is that for most, sooner or later, it re-emerges from the subconscious when there is a similar challenge that triggers or reactivates the emotional content brewing under the surface. Persistent, unresolved emotions do find some means of expression, whether an individual is consciously aware of how exactly this is transpiring in their own life [26].

**Skill-Building Exercise: Self-Awareness**

Self-awareness is what Socrates describes in his famous quote, "The only life worth living is the examined life" [27].

Take the time to listen to what your difficult emotions have to say, just as you would with a friend experiencing loss and feelings of a broken heart. As you strive to recognize and welcome whichever emotions surface, you might become more aware of difficult emotions, but with practice you will also end up noticing more pleasant ones, such as joy and serenity, appreciation, and pride.

## The Glass Half Full: Gratitude

In order to avert danger, the brain functions in such a way that it tends to focus on the negative [28]. The human brain has evolved to stay alert to any sense of threat; hence, the human brain is designed to identify problems [28]. As physicians who stand near or with the suffering of patients, this is known all too well. For patients who have experienced trauma, their fight-or-flight narrative may come to

**Skill-Building Exercise: Gratitude**

A life coach once wrote that for every weakness or imperfection one may see in himself/herself or the people and things around, it is important to recognize three positives within the situation to equipoise the negative [29]. Acceptance and flexibility are necessary ingredients in order to tune into your internal dialogue and begin to generate the conversation [29].

The intention of this remark is more important than getting caught up in the ratio of precisely how much "positive" to observe in your world. The truth is that there will always be a mix of positive and "flaws" in the life of the parent and physician and in all human life. But a part of maturing and easing dis-ease in our self-experience is to recognize this mix in ourselves more readily. This isn't to suggest to falsely inflate our positive emotions, but rather to combat a natural yet often unhelpful phenomenon: when we are stressed or sick, our mind may insert cognitive distortions that emphasize negative perceptions. So start reprogramming your brain to take in the positive now: let things that you are thankful for step into your awareness. There is much beauty to behold in the world we are creating for our children. See it so you can share it with them. This is of course a work in progress and a lifelong contract with oneself. The mastery of any skill is never complete. But working on being talented at finding gratitude every day brings one closer to reconnecting with their "essence," "soul," and true self (or whatever you want to call your anchoring identity).

the medical office in the form of somatic symptoms or a story containing cognitive distortions. One way to shift the brain from a negativity bias to an openness to positivity is by practicing gratitude.

## Say It Until You Feel It: Mantram Repetition

"Mantra" means a "sacred message or text, charm, spell, or counsel." In Sanskrit, "man" means "to think" and "tra" means "tools" or "instruments," so the literal translation of mantra is "instrument of thought" [20]. When applied in daily life and also in clinical settings, "mantram" refers to a spiritual word, phrase, or brief prayer that people repeat silently to themselves to calm the body, quiet the mind, and improve concentration to restore the spirit. There is a slight difference between "mantra" and "mantram". As reflected above, both are taken from a Sanskrit word meaning "instrument of thought." The difference is this: a mantram is a vocalized instrument of thought, while a mantra is silent. Mantram repetition program (MRP) is an evidence-based meditative intervention [30]. In one study, Bormann summarizes findings about MRP offered in a group format, in 6 or 8 weekly, 90-minute face-to-face sessions to both patient and non-patient populations [30]. Studies in veterans with chronic diseases demonstrated improvements in perceived stress, anxiety, and anger, and increased levels of spiritual well-being and quality of life. Veterans with posttraumatic stress disorder reported improvements in symptoms, quality of life, and spiritual well-being [30]. Family caregivers of veterans with dementia reported significant reductions in caregiver burden, depression, and anxiety after participating in the MRP. In addition to being a highly portable method (it can be practiced at any time and in any setting), mantram repetition is easy and inexpensive. Repeating some mantras can help people break maladaptive cognitive patterns if we agree that beliefs can define who we think we are and influence our actions, leading to a specific outcome [29]. But beliefs are undone the same way they are created [29]. Pause to examine what you are saying internally that interferes with your results

**Key Point**

These authors encourage trainees to cultivate a positive perspective in their dual caregiver roles; for example, physicians can view their professional and family roles as having the potential to boost one another by finding intersections between them (e.g., learning new knowledge or skill in one setting might apply to the other).

and start transforming those conversations by choosing affirming, positive, and fruitful mantras.

## Finding One's "Freedom"

Is it as simple as a piece of paper for the closet writer, a mat for a yoga master, or a room different than a cubicle for the clinician stuck in their office all day? It is a good start and all should protect that freedom to ultimately expand it. Start with the little amount of freedom (spatial, temporal, or financial) you have, and gradually expand your skills and understanding of the innate workings of life to grow out of this zone. One's own relationship with time should be protected, and having a healthy routine can help prevent other forces from taking it over: reading time, yoga time, tea time, etc. Many physicians find benefits in journaling and their time with their pen and paper becomes sacred. In her book "Pause," Rachael O'Meara reminds the reader that in journaling, we empower ourselves [31]. The physical act of writing has a neurological effect on the brain; writing stimulates the reticular activating system [31]. The reticular activating system is also important in keeping one self alert. Writing is a great mindfulness exercise! (For further details, see also Chap. 14, *Healthy Habits: Positive Psychology, Journaling, Meditation and Nature Therapy*.) For some, even the "finding" or rediscovery aspect is part of the struggle. The authors found from their own experiences that hobbies and interests that feverishly filled their time before developing the

"doctor role" now seem less of a fit. Weighing through natural and inevitable changes in interests, roles, energy, and demands, especially when combined with symptoms of burnout, can be difficult.

**Skill-Building Exercise: Find your "Freedom"**

If you are someone who does not "know your freedom" or has not felt joy recently, consider starting small and exposing yourself to a new experience or even to a known experience with a new perspective (e.g., going to an art exhibit, enrolling in a new learning opportunity). You might be surprised by how you feel in your body and mind after participating in new spaces and activities. It may mark the beginning of "finding your freedom" and protecting or nurturing that part of your self-experience. These suggestions might feel challenging to implement by a resident physician who is a parent and has a busy work schedule as outlined by their training program. They may feel that every spare moment is occupied by either caring for their child(ren) or home, working on a scholarly or research project, or studying for a board exam. The idea of "freedom" may even seem incomprehensible at this stage of training. Still, even if it means squeezing in just a few minutes for oneself each week, the authors believe it is an investment that trainees will not regret.

One framework that can be eye-opening and help make the creation of "freedom" a priority is "ikigai" (see Fig. 4.2). Ikigai is a Japanese concept that means "a reason for being" or "purpose in life" [32, 33]. The word "ikigai" is usually used to indicate the source of value in one's life or the things that make one's life worthwhile. Translated into a diagram, the optimal place or activity for an individual is at the intersection of four parameters:

- What you love
- What you are good at
- What the world needs
- What you can be paid for


**Fig. 4.2** Ikigai

**Skill-Building Exercise: Your Ikigai**

1. Consider personalizing your own ikigai (intersection of passion, mission, vocation, and profession) (see Fig. 4.2).
2. Is it balanced? If not, which areas of your life can be adapted to bring more meaning and a sense of aliveness?

## Let Go of Perfection

As a resident physician, having realistic expectations allows one to make choices that are more likely to lead to desired outcomes. It is the authors' opinion that it is beneficial to detach from exclusively

seeking specific outcomes related to those elements of life over which one has less control. Physicians would benefit from detachment from the notion that the outcome is the only significant element of the equation. This philosophy is somewhat counterintuitive to medical training, where dogma centers on making an accurate diagnosis and practicing attention to specific details. In professional development and parental development, however, this process is crucial. For example, for one of the authors, significant personal benefit has been derived from changing her expectations for a tidy household with dinner on the table at times when she is alone with her children and her husband is at work; instead, her focus shifted to seeking to enjoy her children more and letting compromises happen with regards to other demands of household and scheduling.

**Skill-Building Exercise: Ready to Receive Joy**

Some people benefit from a better mind-body connection and find it expressive. Try this simple exercise yourself; notice the effect and see if engaging your senses is beneficial in expanding your perception and possibilities. Do the following exercises in sequence:

1. Make a fist with both hands. How useful do you think your hands and fingers are at this point? Are you able to type, hold the phone, or cook?
2. Now open up your palms and turn them towards the sky, like in the yoga tree pose. Imagine that your hands are ready to accept joy. Picture releasing negative thoughts or beliefs away through your hands.

## Be Skeptical at Times

> Leo Tolstoy, as quoted by Danielle LaPorte in her book "White Hot Truth," used to say that "free thinkers" are without prejudice or fear of understanding matters that may clash with their own conventional beliefs [20]. This state of mind was said to be "not common but essential for right thinking" [20].

As a resident physician (and throughout your career), always examine your doubts. Share your questions and epiphanies. Talk to peers and role models about what bothers you. Do not hesitate to try different things to find what feels personally optimal; for example, sitting in silence during a psychotherapy session with a patient who does not have much to say at that time or bringing pastries to a group session for patients. Be dynamic and push beyond your physical and mental fatigue and comfort zone. Danielle LaPorte wrote it boldly: *"No questioning = no growth. Your curiosity is the bloodstream of your own spirituality"* [20].

Consider the phenomenon of learned helplessness: when faced with prolonged or repeated exposure to aversive consequences, one gives up [34]. It is as if one learns to see the negative as inevitable, even if there is an escape, because this distorted belief or lie about reality has been hammered in the mind so much that it can hardly be challenged. As physicians, learned helplessness can occur in relation to patients, children, and personal psychological well-being. The environment can be an insidious agent of pathology or a vehicle for rebirth or growth. As physicians navigate living and embodying a caretaker parent and caretaker doctor role, they are encouraged to remain alert and find and protect spaces for themselves. The more curiosity you express about how life works, the more present you aspire to become in their life [20]. Be curious, attentive, and skeptical. Once advice is received, everyone should still make the final call on their beliefs or course of action. "You are the authority on you," wrote Danielle LaPorte [20].

## Strive for Synergy and Collaboration

As a physician and parent, if your children are old enough to do so, help them to develop independence and have them pitch in to help with chores and cooking. It is a win-win initiative because it helps them build skills and self-esteem, while hopefully decreasing your load over time, even if more up-front investment is required for teaching and supervision. In addition, setting personal boundaries by asserting what one can and cannot do is an

important ability in developing and maintaining resilience. It would be unwise to give children the impression that a parent is able to "do it all." Attuned sharing of labor at home (i.e., age matched, emotionally matched) demonstrates to children a trust in their abilities and the value of their contribution.

As a supervising physician, engage in real discussions with resident physicians and medical students about the dual roles of physician and parent/caregiver, along with challenges, successes, and strategies; bring more of yourself to work. Authenticity can be rewarding as it promotes connection and can spark growth and joy in others.

Physicians are encouraged to remember themselves as fellow human beings, who benefit from connections with down-to-earth people. Although it can be challenging with long work hours and when displaced from home and former social connections, trainees are encouraged to maintain a broad social network which includes individuals outside of medicine; trainees benefit from maintaining and cultivating life experiences beyond medicine [35].

## No Recipe for Spirituality

According to Viktor Frankl, spirituality is a concept referring to a universal human dimension, just like the body (soma) and the mind (psyche) [36]. Spirituality knows no boundaries in the sense that unlike certain resources, it is unlimited. Being spiritual tends to create even more spirituality, as opposed to material resources (those who have too much take away from those who have less). It doesn't discriminate and it transcends social inequities. It is a rather abstract or metaphysical dimension that everyone can reach at their own pace, in their own way. One cannot prescribe "cookie-cutter" methods to attain it and there is no "one-size-fits-all" definition either. Compassion and mindfulness are the core ingredients to access it. Participating in a cause bigger than oneself can provide that. Deep connections with others can make people more spiritual. Although some can find spirituality in religion, being religious is not required to be spiritual. Like anything else in life, try to find your answers and listen to your inner voice and wisdom. *What does it mean to*

*you? Which traditions or rituals have meaning? Can you create your own traditions based on your core values? How do you put spirituality at the service of your various roles?* In the book "The Soul of the World," Frédéric Lenoir creates a modern fable to illustrate the deep commonalities of all humans, regardless of the religious practice or dogma they identify with [37]. In difficult times, people face existential questions about the meaning of life, including legacy of work and parenthood. Spirituality can be a precious tool to attain inner peace and deep wisdom.

## When All Else Fails… Reboot

Taking a leave of absence or vacation can help recalibrate one's biorhythms, immune system, or relationships. No need to go far. One can take a vacation by saying *no* to an extra task or demand. One of the advantages of experience is developing deeper knowledge of oneself (including strengths and limitations). One becomes more aware of the essential conditions for optimal functioning. When everything seems to be hectic or overwhelming, do not hesitate to stop in order to reset. Leave a situation, get fresh air, drink water, take a deep breath, put on your favorite music, or go jogging and come back with a refreshed perspective. One might even say that at one time or another we all have or will find ourselves in the "when all else fails" default mode. The quest is not linear; the path is neither predetermined nor unanimous. Inevitably, at some point most people will need to engage in some version of "rebooting." Such times should not be perceived as failure, nor should one suppose that missteps were taken; rather, such times should be embraced as an opportunity to see, hear, and do what is needed for positive growth and forward movement in the midst of challenge.

## Simple Life's Pleasures: Hygge

Denmark is one of the happiest countries in the world, and in recent years it has been named among the top three happiest nations on the planet [38]. Hygge, a Danish word pronounced

"hue-gah," refers to taking genuine pleasure in making ordinary, everyday things meaningful, beautiful, or special. It is a quality of coziness and comfortable conviviality that engenders a feeling of contentment or well-being, regarded as a defining characteristic of Danish culture [39].

For instance, hygge can involve cuddling on the couch with a good book and a cup of tea, tickling a child, walking in the woods, a candlelight dinner in good company, time away from screens or other time-sinks like social media and work e-mails. It is about slowing down to be mindful and grateful for life's simple treasures. It is about noticing the beauty in simplicity and imperfection and in maintaining comfort to help "recharge the batteries." Hygge makes one more present, self-aware, and better able to connect with others. Children are usually the experts in mastering the joy of life. Observe them, model them. Joy is inexpensive, accessible to all since birth. In a way, hygge is the antidote to the common compulsion to "always be doing something." As a physician, add pleasure to the duties of medicine by prioritizing pleasing decorations in your office, spending lunch hour off site with colleagues, breaking for 10-minute yoga in the midst of EMR charting, or listening to your favorite music while responding to interminable e-mails.

Many have said that joy is optimal when it is derived from a pleasurable experience combined with altruism; to give as we love gratuitously can be source of a great joy, says Lenoir [22].

Spreading the word about joy can also be a source of deep satisfaction at work. One of the authors has started prescribing "hygge" to patients in her psychiatric practice; first, she explains the meaning of this word, provides examples of this approach, and invites them to read about it and try this portable, inexpensive, side-effect free method to promote wellness. Through narrative approaches, she also guides her trainees in cultivating a sense of awe during discovery model classes; these empowering, resilience-based classes support meaningful exploration of the "self," with "no right or wrong answer,", similar to the Healer's Art course developed by Rachel Remen [40].

**Skill-Building Exercise: Your Hygge**

Take a pen (of your favorite color if you have options!) and a piece of paper.

Write down your favorite hygge-promoting moments.

1. How are you feeling as you are writing this down? Notice the sensation of pen on paper, your facial expression, your muscular tone, your heart beat and breathing, and the flow of your thoughts.
2. How would you "sell" the idea of joy cultivation to a patient?
3. Rate your satisfaction level (1–10) derived from the activity of writing.
4. What else did you notice? What about the shift of your attention or emotional experience? Were other ideas generated through the act of writing?

## Make Time for the Tribe

In his TED Talk, Johann Hari talks about "social prescribing" or the "group effect" as an essential component of healing [41]. Basically, humans need one another to continue to learn, grow, and heal. A randomized clinical trial found that an intervention for physicians based on a facilitated small-group curriculum improved meaning and engagement in work and reduced depersonalization, with sustained results at 12 months after the study [42]. Feeling accountable to a group entity ("I must attend to make sure colleague Dr. So-and-So is ok") gives a sense of purpose and a sense of belonging. Physicians are not exempt from this important social need, especially when the practice of medicine itself can feel so isolating at times. Some doctors (including the authors of this chapter) have found solace in a regular book club, art club, poetry group, hiking crew, Balint group, or other interest group as safe spaces to share struggles and potential solutions linked to

medical practice and parenting/caregiving. The specific focus or activity does not really matter, as long as it is a positive experience for the participant. The most important aspects are the social bonds and the mutual support the group dynamic offers; for the authors, collaborating for the creation of this chapter promoted a deepened compassion for each other and strengthened solidarity.

## Check Your Learning

### Case Vignette: Jennifer

#### Case Part I

Jennifer is a 33-year-old, third-year psychiatry resident. She is 8 weeks pregnant and unsure when to disclose her pregnancy to her residency program director. She and her husband had agonized about the timing of a pregnancy. They would like to have multiple children and are concerned about fertility. When she interviewed at her program, Jennifer heard some of the other residents complaining about having to take additional call to cover for a classmate who was on maternity leave. She worries about how her pregnancy will affect her relationships with her peers. This year Jennifer is working exclusively in a busy outpatient clinic. She recently began to experience morning sickness and had been a few minutes late to clinic on more than one occasion due to nausea and vomiting. Jennifer worries about departmental attitudes toward pregnancy in residency and how it will impact her evaluations.

***Question. True or False:*** **Becoming pregnant during residency can have a negative impact on resident evaluations and fellowship prospects.**

A. **True**
B. **False**

**Answer: A ✓**

*Several studies have attempted to characterize attitudes surrounding pregnancy during residency. Multiple studies have found that female residents who are pregnant or parents were*

*likely to be "perceived negatively by the resident herself, her colleagues, as well as by the educational leaders." [10]. These attitudes tend to disproportionately target female trainees as opposed to their male peers who are also parents. One study of general surgery program directors showed that 61% of them believed that female trainees' work was negatively impacted by becoming a parent [9].The most common reason reported was the increased burden on fellow residents; however, having fewer scholarly activities, fewer clinical activities, less dedication to patient care, and decreased timeliness were also cited [9]. Although the perception that female physicians in training who are pregnant or parents has decreased productivity remains, multiple studies have demonstrated the opposite. A study describing pregnancy during OB-GYN residency showed that pregnant trainees did not complete a statistically significantly different number of cases compared to their peers [11]. We believe that more that is written on this subject will change attitudes. We hope we have also demonstrated some of the tremendous additive qualities parenting brings to the physicians' clinical practice and personal life as well.*

## Case Part II

After reaching the second trimester milestone, Jennifer decided to disclose her pregnancy to her program director and peers. By then others had started to guess that she might be pregnant and the response was mixed. While many co-residents and attendings appeared happy for her and were generally supportive, there were grumblings from others about the impact on the call schedule. Jennifer requested to see the department's maternity leave policy but discovered there was not one. Instead she was referred to the institution's human resources office where she was advised to apply for FMLA (Family and Medical Leave Act of 1993), a labor law in the United States providing job protection and unpaid leave for employees with qualifying medical and family issues [43]. Jennifer was advised by her program director that depending on the timing of the delivery, she might have to repeat her current clinical year of training. Frustrated and discouraged by the lack of a clear policy or plan, Jennifer sought out the advice of other mothers in the department.

***Question. True or False:*** **The Accreditation Council for Graduate Medical Education (ACGME) in the United States has a formal parental leave policy.**

A. **True**
B. **False**

**Answer: B ✓**
*Although there is no current formal parental leave policy that Graduate Medical Education (GME) programs must adhere to, the ACGME does mandate that leave policies created by their programs must be consistent with the law and also satisfy any relevant requirements set by the certifying boards [10]. These policies may be affected by the American Medical Association's (AMA) maternity leave policy and the Family and Medical Leave Act of 1993 [10]. In contrast, Canadian trainees may take up to 78 weeks parental leave off, with varying financial support depending on whether they pay into federal employment insurance, or the province where they are training [44].*

## Case Part III

Jennifer was able to work up until the anticipated start of her maternity leave, during which time she front-loaded her call so as not to overly burden her peers. Her delivery went smoothly and she gave birth to a healthy son. She took six weeks off for maternity leave (which is standard for parents in the United States) that was offered by her institution, envying her fellow Canadian residents who could take more than a year of paid leave, and returned to work. It was difficult for Jennifer and her partner, who was also a medical resident, to find a daycare provider they could afford on their salaries. Jennifer struggled with post-pregnancy blues and mild depression, transitioning her child to an unfamiliar caregiver and returning to work. As most daycares require that children with fevers remain at home until 24 hours after the fever has resolved, Jennifer had to call in sick and stay home with her son several times during his first year of life. Although she and her partner took turns caring for their son, she felt resentment from the clinic staff who had to reschedule her patients at the last minute and from her peers who had to

cover her urgent medical follow-ups. Fortunately, Jennifer was able to pump breast milk in the privacy of her office; however, the clinic appeared less flexible with her clinical schedule and didn't block adequate time to pump, leading to uncomfortable engorgement symptoms. While she had hoped to breastfeed for a year, Jennifer had to wean when her son was six months old. Physically exhausted from caring for an infant who woke up several times each night, and emotionally fatigued from treating a panel of patients with challenging psychiatric problems, Jennifer's self-care began to suffer. She no longer felt she had time to exercise and found it hard to plan and cook healthy meals, instead relying on convenient take-out options. Recognizing the lack of balance in her life and the sense of frustration that many parents feel when pulled in two competing directions by equally important things (work vs. family), Jennifer sought the assistance of her institution's physician wellness team. She began to work with a counselor available to residents who assigned mindfulness activities. She shared her feelings with advisors and peers who were also parents and received helpful advice and support. A mentor told her about ikigai and Jennifer was able to reconnect with those things in life which really mattered to her and nourished her, such as playing the violin and volunteering. She even became an advocate for parents by working on a parental leave policy task force, realizing through the ikigai that parenting should be more highly valued by medical programs, employers, and government. It is the opinion of the authors that offering a salary up to one year (or two as in some Scandinavian countries) during parental leave makes good sense for humanity. In considering the balance of the ikigai, supporting successful work-life integration for physicians who are parents of young children honors the intersection in the center of the model previously illustrated. The authors argue that society should support parents of young children in raising healthy, securely attached children, through remuneration during maternity/parental leave, in addition to other important supports such as affordable and accessible childcare. Finally Jennifer and her husband created a schedule that would allow each of them some time during the week to exercise and reengage in hobbies they had both abandoned when they initially became parents.

***Question. True or False:*** **Maintaining work-life balance is an important component in promoting resident wellness.**

A. **True**
B. **False**

**Answer: A ✓**
*A 2017 study of Canadian residents from various medical specialties found that residency training could be "all-consuming," impacted their personal relationships, and that poor work-life balance resulted in relationship problems [35]. A systematic review by Raj in 2016 identified autonomy, building of competence, strong social-relatedness, sleep, and time away from work as the major factors associated with resident well-being [45].*

**Key Takeaways**

- Physicians who are also parents and/or caretakers at home face complex challenges related to work-life integration and self-care.
- Attitudes toward a resident or practicing physician who is expecting a child may differ based on gender.
- Letting go of trying to maintain control over all aspects of life has the potential to promote openness and unexpected joy in one's life.
- There can be value in accepting the unpredictable and striving to find something meaningful in it. Turn a disaster into a poem or piece of literature. Remember that acceptance is a mindfulness quality, that it can be a process to achieve, and that personal and professional supports may be beneficial in this process. Mindfulness is an important skill for wellness and resilience that can be learned and practiced.

## Selected Resources

*Suggested books for additional reading on healthy "snacks" for the mind are illustrated in Boxes 4.1 and 4.2.*

**Box 4.1** Selected books about joy and healthy attitudes in life

**Healthy "snacks" for the mind (suggested books):**

"Mindfulness" and "Happiness" by Christophe André
"Wherever You Go, There You Are" by Jon Kabat-Zinn
"I Remember Nothing" by Nora Ephron
"Show Your Work" and "Steal like an Artist" by Austin Kleon
"The Joy of Doing Nothing" by Rachel Jonat
"The Sweetness of Life" by Françoi se Héritier

**Box 4.2** Selected books about parenting

**Parenting resources (suggested books):**

"The Magic Years" by Selma H Fraiberg
"The Interpersonal World of the Infant" by Daniel Stern
"The Emotional Life of the Toddler" by Alicia F Leiberman
"Bringing up Bébé" by Pamela Druckerman
"Strong Mothers, Strong Sons" and "Strong Fathers, Strong Daughters" by Meg Meeker
"Raising your Spirited Child" by Mary Sheedy Kurcinka
"I'm Outnumbered!" by Laura Lee Groves

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# 5 Physician Experience: Impact of Discrimination on Physician Wellness

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## The Physician Experience of Discrimination

Practicing as a resident physician is not easy. This may have been expected upon entering medical school with its combination of long hours, high expectations, and intense competition, proving sometimes to be an exercise in survival. Perhaps what may not

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have been expected though are the numerous other insults to physician wellness that are less often talked about or addressed. These are macro- and microaggressions, the experiences of discrimination based on age, gender, race, religion, disability, and sexual orientation. While not unique to physicians, such bias and discrimination unfortunately impact many physicians' careers and lives, negatively affecting the health and wellness of both trainees and physicians in practice.

In 2018, the Canadian Medical Association (CMA) conducted a national survey of physicians to better elucidate intrinsic and extrinsic indicators of health and wellness among Canadian physicians. Of the 2947 residents and practicing physicians who completed the survey, 30% of participants experienced high burnout and 9% reported a sense of low well-being [1]. Furthermore, one third of respondents screened positive for depression [1]. Results of the survey showed that women and resident physicians had higher odds of experiencing both burnout and depression (OR 1.32 and 1.95, respectively). In addition, physicians in their first 5 years of practice had 1.74 higher odds of having suicidal ideation in the past 12 months [1]. Interestingly, emotional, social, and psychological well-being were found to be significantly higher in physicians practicing for 31 years or more [1]. Despite the high prevalence of burnout and depression, only 15% of all respondents identified having accessed a Physician Health Program in the past 5 years. Shame was one of the top reported barriers to seeking help [1]. It would be interesting for researchers to explore and clarify factors contributing to female physicians' higher prevalence of burnout compared to their male counterparts, as well as those contributing to early career physicians' risk of decreased well-being compared to more established physicians. Until recent decades, medicine has been a male-dominated professional field. Since many graduating medical classes are now predominantly female, and since female physicians more frequently report burnout, some have speculated that outdated historical societal roles and expectations of women (related to home and career) may contribute, at least in part, to this discrepancy [2].

The results of the 2018 CMA survey highlight how certain physician populations may be more susceptible to burnout and a languishing sense of well-being. While there are likely many factors contributing to this, this chapter will explore how experiences of discrimination based on race, age, gender, sexuality, and disability may negatively impact physician wellness and will emphasize the importance of acknowledging and eliminating discrimination while promoting diversity and equality in medicine.

**Skill-Building Exercise: Pause and Reflect**

- When have you encountered discrimination in the workplace?
- What thoughts and emotions did this provoke?
- What impact did this have on your own sense of psychological safety and wellness?

Consider how you responded to this experience. In retrospect, are there any ways in which you would have responded differently? Self-reflection allows for the opportunity to better understand the impacts of discrimination on one's own sense of well-being. Debriefing with a supportive colleague may also be helpful in coping with and learning from these experiences.

## Cultural Safety and the Physician: Microaggressions and Beyond

There is appropriately an increasing emphasis on training physicians to be culturally sensitive; for example, Canada has recently implemented mandatory cultural safety training for all resident trainees [3, 4]. Similarly, the accrediting body for US medical schools requires that medical trainees attain a specified level of cultural competence by the end of training; as such, assessment

tools have been designed to ensure that the standards for cultural competence curricula are met [5]. Cultural safety speaks to the importance of developing a relationship of trust between patient and physician, one that is respectful of diversity and of an individual's uniqueness and value [6]. This is therefore an essential competency of a physician. It is of utmost importance that physicians continue to advocate for culturally safe patient care on both an individual and organizational level. At the same time, physicians themselves represent culturally diverse backgrounds, yet unfortunately may not experience a sense of cultural safety in their own work environments.

**Did You Know?**

*Microaggressions are defined as the everyday biases that communicate a derogatory or hostile message to ward members of a marginalized group [7]. These can be intentional or unintentional slights in the form of words or behavior. Examples of microaggressions include commenting on an individuals' good command of the English language because they are a visible minority or assuming that someone is a nurse because she is a woman.*

Many instances of physicians experiencing discrimination based on race have been described on physician forums and in the media [8–10]. Because physicians have committed to professionalism and healing in their work, it can be ethically challenging when patients express a preference to be treated by a *different* physician – one with a different skin color, accent, or religion. Moreover, such overt signs of racial and cultural bias can understandably activate an overwhelming sense of invalidation for a physician who has worked many years to achieve their level of knowledge and skill [11]. As described by one physician on their experience of racism in medicine: "Racism stripped me of my white coat, my stethoscope, my doctor's badge, my degrees and credentials, my titles, my skills, and my determination to serve" [8]. Notably, the Oxford online dictionary defines *racism* as the "prejudice, discrimination, or antagonism directed against a person or people on the basis of their

membership of a particular racial or ethnic group, typically one that is a minority or marginalized" [Racism. (2020). In Oxford Online Dictionary. lexico.com/definition/racism].

Physicians have described the profound shift in power they perceive because of racial bias, feeling the need to prove their capabilities, to prove that they are not an "imposter" [8]. This may be particularly evident among medical trainees, who already may perceive a sense of powerlessness. In addition to these overt signs of discrimination, more subtle microaggressions may also be a regular part of the physician experience, as exemplified by one physician's description:

> "A raised eyebrow suggests there is surprise or a question about my ability. A 'good for you' is an unexpected affirmation of my credentials as a physician, as if it were impossible for a black woman to achieve this level of training". [12]

The cumulative effects of these experiences can contribute to psychological distress and physician burnout [3, 13]. Beyond clinical interactions with patients, studies have shown that minority physicians may also have fewer opportunities for career advancement and may be underrepresented in leadership positions [9, 14]. To help address this, it has been proposed that medical regulators take a role in addressing racism with anti-abuse policies and by providing physicians with guidance on how to manage experiences of racism in the work environment [10]. As experiences of racial bias may be met with silence out of fear of consequences for speaking out, it is essential that physicians be empowered and feel supported in prioritizing and addressing these concerns related to workplace culture at both individual and systemic levels.

## Honoring the Voice of Indigenous Physicians: The Canadian Experience

Indigenous physicians have historically accounted for a small minority of practitioners, and important initiatives within the last two decades are working to address this in Canada. In recognition

of the distinct health needs of Métis, Inuit, and both on-and off-reserve Indigenous peoples, The Truth and Reconciliation Commission of Canada (TRC) 2015 final report called on all levels of government to: (i) increase the number of Indigenous professionals working in the healthcare field, (ii) ensure retention of these healthcare providers in Indigenous communities, and (iii) provide cultural competency training to all Canadian healthcare workers [15]. Indeed, in response to self-advocacy and decolonizing efforts across Canada, this report also called on the Canadian healthcare system to recognize the value of traditional Indigenous healing practices and ways of knowing, and to utilize these therapies alongside Western medicine and in collaboration with Indigenous healers and Elders where requested by patients [15].

Now 5 years post-TRC publication, positive strides have been made, yet a significant health disparity still exists between Indigenous and non-Indigenous Canadians [15]. Despite comprising 4.9% of the Canadian population, Indigenous people are believed to represent less than 1% (760 vs. 93,985) of practicing physicians [16]. It is encouraging that this number has doubled over the past decade, with an approximated number of 200 Indigenous physicians practicing in 2008 [17]. This slow increase in numbers may also be due in part to the 2005 Kelowna Accord, which set a target to double Indigenous physicians in the following decade [18]. This historic deal was preceded by a 2004 announcement from the Aboriginal Human Resources Initiative, which, in addition to the recommendations reiterated in the TRC's 2015 final report, supported three areas of focus: adapting healthcare curriculum to support cultural competencies, increasing the number of Indigenous physicians, and increasing retention of healthcare workers in Indigenous communities [19]. To further recognize the specific expertise of First Nations, Inuit, and Metis physicians, as well as their right to self-determination, the Indigenous Physicians Association of Canada and the Association of Faculties of Medicine of Canada signed a joint agreement to establish admission support programs to prospective Indigenous medical students, including pre-admission toolkits, and to promote recruitment and retention of mature Indigenous students [17].

Despite the implementation of these policies, grants, and initiatives, the road to becoming a physician is ripe with obstacles for many prospective Indigenous students, at times including lack of generational wealth, systemic barriers, overt racism, ripping from traditional lands and supports to attend urban-based schooling, and lack of professional role modelling and Indigenous-led mentorship [20]. Literature qualifying these specific struggles is sparse, with authorship from Indigenous healthcare workers even sparser. Legacies of colonization, intergenerational trauma, power imbalance, and policies perpetuating institutional racism create substantial obstacles to individuals as they strive to contribute as future Indigenous physicians, scholars, and community leaders. As well, current competitive healthcare and educational frameworks can create ongoing challenges for Indigenous medical students and residents navigating their future career goals [21, 22]. In 2013, the Royal College of Physicians and Surgeons of Canada formally identified the importance of cultural safety and self-reflection as integral competencies for Canadian practitioners as effective communicators, collaborators, and medical experts [23], with many residency programs across North America requiring learners to engage in Indigenous health and cultural safety training [4, 5, 10].

On the journey towards reconciliation, Canadian physicians are called to be advocates and allies with their Indigenous peers and patients, supporting growth and inclusion of Indigenous medical students and residents, calling out racism in communities and in the workplace, by honoring Indigenous expertise, and by creating space for Indigenous leadership [15, 21, 22].

**Skill-Building Exercise: On Experiences and Allyship**

The Anti-Oppression Network of Canada defines *allyship* as the "active, consistent, and arduous practice of unlearning and re-evaluating, in which a person in a position of privilege and power seeks to operate in solidarity with a marginalized group" [24]. Physicians, by virtue of profession and place in society, are called to be advocates and allies on behalf of their patients. This calling is further emphasized by the roles of

*Communicator, Collaborator,* and *Health Advocate* within the CanMEDS Competency Framework, but does not explicitly make reference to the duty of allyship to physician peers. The authors challenge the reader to consider how they can be better team members and advocates for both themselves and colleagues affected by bias and discrimination [25]. Notably, the Oxford online dictionary defines *bias* as the "inclination or prejudice for or against one person or group, especially in a way considered to be unfair" [Bias. (2020). In Oxford Online Dictionary. lexico.com/definition/bias]. *Discrimination* is "the unjust or prejudicial treatment of different categories of people, especially on the grounds of race, age, or sex" [Discrimination. (2020). In Oxford Online Dictionary. lexico.com/definition/discrimination].

**Reflection questions:**

1. Do you identify as an Indigenous or visible minority physician? Have you or any of your colleagues experienced any of the challenges discussed in this chapter? What factors do you believe contribute to these challenges? Conversely, what supports and protective factors contribute to your personal and professional wellness?
2. Think about a time you engaged with an Indigenous patient who valued traditional healing practices and medicines. What impact did you think these methods had on your patient's healing? What did you learn from these encounters?
3. Reflect on your own thoughts, feelings, and questions related to clinical experiences incorporating traditional medicines, healers, and/or Elders into your patients' care. What did these interactions evoke?
4. What changes to your daily practice are needed to provide culturally safe and inclusive care to all patients? What steps can you take to be a better physician ally with your colleagues who experience discrimination and racism?

## Ageism and the Physician: "You're Too Young to Be a Doctor"

At some point during their medical career, and often in residency, many physicians hear a patient comment, "You're too young to be a doctor." While such a comment may be considered benign or even complimentary from the patient's perspective, the physician may perceive the meaning to be, "You're too young to be *my* doctor." This passing comment can then hold significant meaning for the physician if the perception is that the patient is not confident in the care that is being provided to them. While there is a dearth of published literature on this topic, it can be argued that such comments may contribute to a sense of invalidation and imposter syndrome for some physicians. Similarly, patients have been known to request "the real doctor," which can be interpreted at times as distrust in the resident physician's abilities and care.

On the other end of the age spectrum, there has been some debate in the published literature and the media about the clinical safety of older practicing physicians, especially those beyond the average age of retirement. In the USA, the largest age distribution of practicing physicians (29%) in 2018 was between 55 and 65 years old [26]. While the average age of physicians in Canada was close to 50 years old in 2018, this is expected to rise in coming years and it is estimated that 20% of Canadian physicians will be 65 years or older by the year 2026 [27, 28]. Approaching retirement can be a time of profound change for physicians. Not only does the physician need to consider and balance financial obligations, workload, and a sense of responsibility to one's patients, but work is also likely to have become a significant part of one's identity [29].

The question has been asked time and time again: should older physicians be "required/mandated" to retire at a certain age? Several studies have demonstrated the association between aging and decline in cognitive abilities such as processing speed and visuospatial ability and, as a result, some speculate that cognitive evaluations of older physicians may be warranted [30]. However, older physicians can also offer extensive clinical knowledge and experience and may continue to perform at or above the same

level as their younger colleagues [31]. Overall, it is likely that the effect of age on a physician's competence is highly variable [30, 32]. Using older age as the sole determinant of when a physician should lay down their stethoscope or scalpel can thus be conceived as a form of discrimination, no different than making negative assumptions about a physician's level of competence based on their youthful appearance. Rather than making assumptions, it has been recommended that older physicians might consider making a habit of regularly seeking out feedback on performance from peers and listening carefully to any concerns expressed by others [32].

## Harassment and Discrimination Among Medical Trainees

A well-researched topic in academic literature is that of harassment and discrimination among healthcare professionals including medical trainees. It is well-known that mistreatment of medical trainees contributes to the high rates of burnout and mental health concerns that are experienced by this population [33, 34]. A 2014 meta-analysis of 51 studies showed that 59.4% of medical trainees experienced some form of harassment or discrimination on at least one occasion over the course of their medical training [34]. Verbal harassment was found to be the most common form of abuse, with consultants being the most commonly cited source of harassment and discrimination [34]. Given that supervisors are in a position of superiority and that learners might fear negative professional consequences for speaking out, it can be difficult for learners to report experiences of harassment and abuse. Reporting policies and processes that are clear and reliably enforced are imperative if this issue is to be successfully addressed in medical education [34, 35].

Sexual harassment frequently affects both female and male physicians during their careers and is important among the discrimination experiences and burnout of physicians. Although some recent data reported high rates of sexual harassment in both women and men [36], consistent research findings have established

that sexual harassment is a much larger problem for female physicians than for male physicians and emphasized the influence that sexual harassment has on women in medicine [36]. In a 2014 survey of US academic faculty, 30% of women reported having experienced workplace sexual harassment [37]. Among women reporting harassment, 59% reported that these experiences negatively affected their confidence as professionals, and 47% reported a negative impact on their career advancement [37]. Furthermore, Jenner and colleagues have recently shown that strong institutional hierarchies in medicine were associated with sexual harassment in both sexes [36]. The authors call for a cultural shift in the medical hierarchy in the form of structural and widespread action to address and mitigate risk of sexual harassment in academic medicine [36].

Reporting sexual harassment can be taxing and risky, even in the current #MeToo era; those who report sexual harassment may experience stigmatization, marginalization, or retaliation [38]. This can lead to chronic stress and burnout for those affected. During medical training, false accusations of sexual harassment and abuse are believed to be uncommon and medical trainees have a lot at stake in reporting abuse. Supporting those affected by any kind of harassment, including sexual type, from marginalization and retaliation is of utmost importance. If a medical trainee is being harassed at work, Table 5.1 summarizes general tips on what to do and where to go for help [39].

In addition, sexual harassment of physicians by patients deserves special attention due to its high frequency and complexity [40]. A recent study has shown that nearly one-third of physicians reported being sexually harassed by a patient [36]. This can lead to significant negative consequences that affect both the physician and the patient's care [40]. Further research to investigate the prevalence of patient-initiated sexual harassment is warranted. Formal processes for reporting patient-initiated sexual harassment and addressing it in medical settings are greatly needed. For example, Viglianti and colleagues have suggested a useful algorithm to guide medical trainees and practicing physicians in balancing their obligation to provide care with their need to work in a safe environment [41]. The key question

**Table 5.1** Tips for medical trainees experiencing workplace harassment [39]

| |
|---|
| Incidents or complaints of workplace harassment should be reported right away to your supervisor or person designated by your postgraduate education office (sometimes the program director or rotation coordinator) |
| Prepare and keep a written record of:<br>When/where you were harassed<br>What was said/done<br>Who said/did it<br>Names of any witnesses |
| If you have been a victim of a criminal offence (e.g., physical assault, sexual assault, stalking), you should call the police |
| Seek out a peer/person at your workplace who can provide confidential support |
| Access local support organizations and learn about relevant local laws; e.g., one can contact the Ministry of Labour in Ontario about a workplace harassment complaint if the employer fails to conduct an investigation that is appropriate to the circumstances |
| In Ontario, the Assaulted Women's Helpline (http://www.awhl.org/contact-us) offers a 24-hour telephone service to provide counselling, emotional support, information, and referrals to women who have experienced harassment and/or abuse. (Data from Ontario Ministry of Labour: https://www.labour.gov.on.ca/english/hs/pubs/fs_wvh_atwork.php) |
| All academic institutions have harassment/abuse policies, procedures, and guidelines, including how a medical trainee can access confidential support to discuss a concern or make a formal complaint; e.g., at McMaster University in Hamilton, Canada, there is the policy Discrimination and Harassment: Prevention & Response (https://www.mcmaster.ca/respectfulcommunity/), a resource for anyone who wishes to discuss a discrimination or harassment concern, to schedule an educational presentation, or to request materials |

in this algorithm for a medical trainee or a practicing physician is, "Do you feel safe?" If one feels safe, the patient's behavior needs to be clearly and promptly addressed [41]. If feeling unsafe, the medical trainee or practicing physician has the right to excuse themself from the patient encounter as promptly and safely as possible, while seeking help from a colleague and/or supervisor [41]. All such instances of sexual harassment should be reported to the appropriate leadership [41]. At the physician's discretion, the patient's care can be transferred to a

different physician, in keeping with most institutions' obligation to support the decision of the physician while caring for the patient [41].

## On Being a Woman in Medicine

Female physicians, residents, and medical students continue to suffer from gender-based intimidation, discrimination, harassment, and perceived role expectations that negatively impact their residency applications, educational experience, hiring, financial remuneration, career trajectory, leadership opportunities, and personal wellness [42–48]. To state it clearly, the Canadian Human Rights Commission defines harassment as any unwelcome threats, comments, jokes about one's identifying factors, or any form of unwelcome physical contact [49].

For the first time in recent history, women and men are graduating from medical school at the same rate [50]. Despite this 1:1 ratio, female physicians continue to be under-represented at many levels of leadership and are less likely to receive promotions [50, 51]. For example, female physicians are less likely to be full professors, are more likely to be assistant professors, and are less likely to be engaged in high-level management and institutional leadership roles [51]. In exploring potential barriers to career advancement, female physicians are more likely to cite challenges with work-life balance, child rearing, workplace harassment, and lack of female mentorship as factors complicating their career development and impeding their ability to pursue and obtain leadership roles [50]. Conversely, supportive mentorship, academic drive, positive feedback from peers, and support from female physician-mentors strengthened the resolve of female physicians seeking out leadership positions [50].

In comparing harassment and discrimination within residency training, it is also important to recognize the heterogeneity among residency programs. Compared to female physicians and residents working in primary care, female residents and physicians in traditionally male-dominated fields, including surgery, encounter a disproportionate amount of sexist remarks or behaviors,

unwanted sexual advances, subtle bribery for sexual acts, and threatened sexual behavior from colleagues [51, 52]. Furthermore, medical student and resident reporting of harassment and discrimination increases with years of clinical experience. In comparing surgical and non-surgical residents, the likelihood of experiencing acclimatization to a patriarchal culture and, in turn, perpetuating abusive or discriminatory behavior increases with years of medical experience [52]. In such cultures, over time, female residents were also more likely to engage in psychological abuse, disrespect, and gender discrimination, which were more prevalent than overt sexual or physical abuse [52]. Interestingly, when female surgical residents and practicing surgeons transitioned into non-surgical residencies, teaching appointments, and/or primary care, reporting of harassment and discrimination reduced, and the patronizing and sometimes abusive teaching methods stopped [52]. While the reasons for these changes are not well understood and likely multifactorial, one possibility is that primary care settings are more supportive of female physicians because the number of female primary care practitioners is higher; these environments also foster collaboration, and primary care settings generally place less of a value on hierarchy, authority, and antiquated hegemonic structures than other procedural or surgical residencies [51].

While researchers and advocates work to better understand modern-day rates of harassment and discrimination, these studies are inherently biased by the perceived and real consequences of "whistleblowing." As previously stated, even in the #MeToo era, reporting sexual harassment remains stressful and risky; women who report sexual harassment can experience retaliation and marginalization, potentially leading to chronic stress and burnout [38]. It appears that strong female mentorship benefits women (and men, too) and can lead to increased opportunities for female leadership, which propagates stronger female physician support networks for the next generation. This suggests that a better way forward for the female physicians of tomorrow will be supported by the female physicians who continue advocating tirelessly today. Of note, the word "mentorship" can denote a formal relationship. Yet, women do not need to rely on formal mentorship

programs to benefit from the guidance of peers. Remember that a *mentor* is someone who believes in you!

Furthermore, in many workplaces women still earn less than men for equivalent work; significant sex differences in salary still exist among academic physicians even when controlled for age and years of experience, medical specialty, academic rank, and measures of productivity and human capital [53, 54]. A call to action for academic institutions and society in general to continue efforts to address the gender pay gap is greatly needed. Whereas there is the need to attract and retain the most talented medical workforce, closing the gender pay gap makes good economic sense.

## The LGBT2Q Physician Experience

A discussion about gender, harassment, and discrimination in medicine would not be complete without acknowledging and exploring the experiences of physicians who identify as lesbian, gay, bisexual, transgendered, two-spirited, queer, and questioning (LGBT2Q). Physicians within the LGBT2Q community often take on important roles in advocating for LGBT2Q healthcare issues, including safety and equality in the healthcare system for patients and providers. Through their own personal and professional experiences, distinct and ongoing challenges are highlighted in relation to harassment, abuse, and discrimination.

Research exploring such experiences of physicians within the LGBT2Q community are sparse, and of the scant literature attending to LGBT2Q health, studies are often limited to the patient or consumer experience only. Healthcare institutions continue to uphold systemic barriers and discriminatory policies, as exemplified by the mandated cultural safety training largely ignoring diversity as it pertains to sexuality and gender identification [55]. Furthermore, though medical student-led advocacy groups call on faculties to teach LGBT2Q content, medical curricula often ignore transgender population health completely [56, 57].

Disclosure of gender and sexual identity continues to be an important stressor for medical and residency applicants in Canada.

In one study by Oriel and colleagues, 70% of gay and lesbian medical students stated their specialty choice had been influenced by perceived acceptance of their sexual orientation in that field [58]. A more recent study found that both medical students and residents within the LGBT2Q community were more likely to purposefully *not* disclose their gender or sexual orientation for fear of discrimination during the application cycle [59].

Practicing physicians within the LGBT2Q community can experience discrimination throughout the course of their work. In one study of LGBT2Q internists in Canada, 30% of respondents had been subjected to homophobic remarks on at least three separate occasions [48]. Furthermore, Brogan and colleagues found that almost half (41%) of lesbian physicians surveyed had experienced workplace harassment and were at a greater risk for developing depression compared to their heterosexual female colleagues [60]. Some LGBT2Q physicians even report choosing to "pass" as heterosexual in an effort to maintain the patient-physician therapeutic relationship and avoid potential problems with their patients [61]. Indeed, almost one-third of Americans randomly surveyed stated they would switch healthcare providers if their doctor identified as LGBT2Q, with a similar number of respondents stating they would switch clinics completely if LGBT2Q physicians were employed [62]. Such homophobic and discriminatory fears and attitudes persist with concerning negative impact on the health and well-being of individual physicians, patients, and society.

Discrimination against medical students, residents, and physicians identifying as LGBT2Q by patients, community members, peers, colleagues, and the system is completely inappropriate and unacceptable. In returning to the theme of allyship, it is important that one's words and actions foster inclusion and mutual-respect for all patients and colleagues, regardless of sexual and gender-identity. Silence surrounding LGBT2Q experience can be interpreted as a form of collusion, a disavowal of sexual difference. However, this silence must be broken in order to deconstruct this need to suppress difference, which can be indicative of a larger paradigm of gender relations. Digital social networks have an endless potential to educate about gender gap

through various initiatives including consistently addressing gender-related bullying and promoting inclusivity on their social channels, among others.

## Working as a Physician with a Disability: "Do Not Disclose"

To many in the medical profession, the word "disability", may be equated with vulnerability. There may be a fear of negative professional consequences as a result of having a disability, such as fewer employment opportunities or options for professional advancement [63]. Beyond this, there may be a fear of being stigmatized, with others making assumptions about one's ability to practice safely. The fear of such consequences may lead to the practice of: "do not disclose." This lack of disclosure can lead to a sense of isolation, a sense of being "different," and an overall decreased sense of physical and psychological well-being.

Data supports that physicians are less likely to self-disclose a disability in comparison to the general population [64, 65]. As a result, there is limited up-to-date information on the exact number of medical trainees and physicians in Canada and the USA practicing with a disability. Available studies from the USA and Britain have found the most common disabilities among medical trainees to be attention deficit/hyperactivity disorder, learning disabilities, and psychological disabilities [63, 66]. The Ontario Medical Association also cites mental health as the number one reason for which physicians are on disability at any one time [67]. Learning disabilities and psychological disabilities have been described as the "invisible" disabilities, those that are not visible to the eye [68]. If individuals choose not to disclose their disability out of fear of negative consequences, then they may be unable to access appropriate accommodations or treatment to optimize and maintain their success and wellness. This risks the adoption of a survival mentality: "it will get better if I just get over this next hurdle" [63]. Unfortunately, in medical practice, there may be an endless number of hurdles to surmount and wellness may continue to deteriorate unless it is made a priority.

Fortunately, medical trainees and practicing physicians with a disability can be supported in their work with disclosure and proactive planning. A recent report from the American Medical Association highlights the importance of including disability support services in any statements welcoming applicants to medical school, along with communicating clear instructions for requesting accommodations [68]. The Canadian Association of Physicians with Disabilities was created to provide a national forum of discussion for physicians with disabilities. The understanding that "disability" does not mean the absence of ability needs to be promoted and accepted within medical culture, for the benefit of patients, providers, and society as a whole [65, 69]. There are a number of inspiring physician stories detailing how one can fight stigma and conquer environmental challenges in order to successfully practice as a physician [64–66]. These stories also highlight the need for institutional and systems-level support in combating stigma associated with physician disability.

Physicians are not superhuman; despite high expectations from self and others, physicians are human and therefore imperfect. Each physician has his or her own unique combination of skills and aptitudes, and the presence of a disability, be it physical, cognitive, or psychological in nature, does not change this. Physicians with disabilities may also be uniquely positioned to be able to advocate and improve accessibility and medical care for patients and others with disabilities [65]. For this reason, it has been argued that the makeup of the physician population should closely mirror the diversity of the patient population being served [65, 69]. As highlighted in this chapter, this principle should extend to all aspects of human diversity including race, culture, religion, gender, sexuality, and the presence of disability.

## Socialization in Medicine: Practice as You Preach

From birth to the end of life, there are countless means through which one learns. In medicine, physicians are influenced by their supervisors, colleagues, patients, and the media. These

interactions, along with those experiences that precede medical training, combine to shape one's approach to caring for patients. This phenomenon is referred to as "socialization" and is defined as how individuals evolve to understand the attitudes and values encompassing a role [70]. Many practicing physicians are able to name a supervisor or mentor who helped to shape their professional identity. For this reason, it is important for physicians to recognize how powerful one's influence can be on a learner's attitudes and behaviors. If a physician mentor fails to appropriately address a witnessed act of discrimination (or is propagating an act of discrimination themselves), he or she is sending a message of intolerance to the learner. If medical trainees are to develop an attitude of inclusiveness and learn how to effectively address discrimination in the workplace, modeling of such attitudes and behaviors by those from whom they learn are key. Moreover, having mentors who reflect the diversity of learners and patients themselves (e.g., based on gender, age, sexuality, disability, race, or culture) is an important factor in fostering a sense of inclusivity.

## Online Reviews, Cyber-harassment, and Physician Stress

Online scrutiny can be stressful for physicians. In recent years, physician-rating websites have become a means by which patients can publicly reflect on their level of satisfaction with care from individual physicians. These websites are often free to use and open forum, affording little or no control to the physician over what is being posted. While a 2018 study showed that the majority of ratings being posted are generally positive, there may also be comments that provide partial, misleading, or false information [71]. Webster has reported that studies of online ratings for physicians are flawed; they appeared to be based on a patient's general experience, reflecting physician friendliness and overall atmosphere, but failing to provide objective measures of quality of care [72]. The Canadian Medical Protective Association (CMPA) suggests

that physicians may be able to take "limited actions to correct or remove objectionable user reviews" but warns against responding publicly to online comments in the event that patient confidentiality is breached [73]. Some physician-rating websites may offer to remove a small number of negative ratings for a monthly fee, but the comments will reappear once payment ceases [74]. This has been described as being "akin to cyberbullying" [74].

Cyber-harassment, or cyberbullying, is a growing phenomenon worldwide and medical field and higher-education settings are no exception. It can manifest in many forms, from private messages sent via e-mail, text, and social media accounts to public campaigns and online platforms [75]. Trainees, faculty members, and staff at all levels can become targets of cyberbullying by anonymous or known individuals or organized groups [75]. Abusive and inaccurate posts can spread rapidly and widely on the Internet, potentially leading to real-life career consequences for targeted physicians. Although social media sites have been criticized as being too slow to respond (if at all) to cyberbullying, they are strongly encouraged to promptly address bullying and harassment on their platforms [75]. Many universities lack official policies on how to deal with cyber-harassment. A study examining 465 policies from 74 Canadian universities found that most institutions had policies around student conduct, discrimination, and harassment, but not all were specific to include online sites and digital media. It is suggested that university policies and procedures undergo frequent review and revision to remain current with the information and communication technologies that permeate the daily lives of university trainees and educators [76]. At an individual level, possible ways to manage harassment on social media include blocking "trolls," taking a break from social media, or leaving certain social media platforms altogether. In general, the community is supportive, and it helps to develop and know your online allies!

**Skill-Building Exercise: Wellness in the Age of Online Reviews and Social Media**

There is little information on how physician-rating websites impact physician wellness. What is known is that many physicians feel uncertain about how to deal with distressing posts on these websites [77]. While the ratings can aid in understanding what patients value in their physicians, it has been described that abuse occurs more commonly on these physician-rating websites in the forms of physician defamation and misinformation for patients [39].

**Reflection questions:**

1. Have you ever checked a physician-rating website to assess patient comments on the care you have provided? If so, what thoughts or emotions did this bring up? Did this information change your practice?
2. Conversely, have you ever used a physician-rating website to review information about your own or prospective physician(s), or to contribute information about other physicians?
3. In your practice, are there helpful ways in which you plan to gather information on patient satisfaction, feedback, and ideas to optimize patient care experiences?
4. Do you believe that physicians have a duty to dispute and challenge inappropriate or inaccurate health information posted online?
5. Do you believe that it is appropriate for physicians to look up publicly available online information about a patient in an emergency situation such as, for example, searching on Facebook for information following a patient's suicide attempt?
6. Do you believe that it is appropriate for physicians to look up publicly available online information such as Internet forum posts about a patient as part of regular clinical practice?

## Check your Learning

### Case Study: "You Are Not Alone"

Genevieve is a third-year resident in emergency medicine. She is working overnight in the busy emergency department and has just been asked by nursing staff to see a patient urgently due to complaints of worsening shortness of breath. The triage note indicates that the elderly patient has a history of severe COPD. As asked, Genevieve goes in to assess the patient urgently. When she introduces herself to the patient, she is met with a disparaging comment about "girl doctors". Attempts at explaining her qualifications fall on deaf ears and she is dismissed in order to go find "the real doctor." Dismayed, Genevieve seeks out her supervisor to solicit feedback on how to best approach the situation. Her supervisor tonight is known to be a strong clinician educator and well respected by program faculty and learners. After learning of Genevieve's experience in the clinical encounter, the supervisor accompanies her to meet the patient. Upon entering the room, the patient graciously greets the male physician. The supervisor proceeds to take the patient history and explain the next steps in care, before moving on to his next patient. The patient's refusal to be assessed by a female resident physician is not addressed.

***Question.*** **Considering the above experience, how could Genevieve's supervisor have responded to address the gender-based microaggression?**

A. **State to the patient that discrimination based on gender is not acceptable**
B. **Transfer care of the patient to another emergency physician**
C. **Explain that Genevieve is a learner under his own direction so he will be the primary physician directing the patient's care**
D. **Explain Genevieve's qualifications, his trust in her abilities, and how she will be taking the lead in the patient's care under his supervision**

**Answer: D ✓**

*Discrimination based on gender is unacceptable in any situation. This case study highlights the sense of powerlessness and abandonment a trainee may experience when put into such a challenging interaction. The importance of a supportive supervisor in this situation cannot be overstated. The importance of faculty training to effectively address instances of discrimination is emphasized, alongside the importance of clear reporting guidelines.*

In summary, this chapter has explored how experiences of discrimination based on race, age, gender, sexuality, and disability may negatively impact physician wellness. Discriminatory attitudes and behaviors reflect opinions formed on irrelevant or external characteristics rather than merit. Open dialogue is critical to combat discriminatory attitudes, and discrimination should be a prioritized topic in medical education and practice in order to defend against threats to physician, patient, and societal wellness. It is the responsibility of all physicians to advocate for diversity and equality, and to stand up against harassment and discrimination of patients, learners, colleagues, and themselves.

**Key Takeaways**

- The cumulative effects of discriminatory attitudes and behaviors experienced by physicians can contribute to psychological distress and burnout [3, 13].
- Indigenous physicians are disproportionately underrepresented in medicine, although policy changes at local, provincial, and national levels are aimed to better support our Indigenous practitioners of tomorrow [50, 51]. Physicians are called to be advocates for Indigenous colleagues by calling out racism, supporting growth and inclusion of Indigenous learners, recognizing and valuing Indigenous expertise, and through reflection and unlearning practices aimed at creating space for Indigenous ways of knowing.
- Women, and especially women of color, are much more likely to experience gender-based workplace harassment and violence than their male and white colleagues.

While institutional policies aim to prevent gender-based harassment and discrimination, female physicians also cite supportive mentorship, strong female physician support networks, and policies supportive of work-life balance as important factors in career advancement [50]. A gender pay gap exists in medicine and must be rectified.

- Current cultural safety training programs often overlook LGBT2Q education as it pertains to physicians, patients, and other consumers of healthcare [25]. LGBT2Q physicians are more likely to be involved in local advocacy efforts on behalf of their patients, and it is equally important to foster inclusion, support, and allyship for physician colleagues who identify as LGBT2Q [56, 57].
- If medical trainees are to embrace and promote diversity and inclusiveness in medical communities and culture, as well as learn how to effectively address harassment and discrimination in the workplace, modeling of such attitudes and behaviors by supervisors, faculty, programs, and institutions is key.

## Selected Resources

For further reading and additional resources regarding the impact of harassment and discrimination on physician wellness, please see Table 5.2.

**Table 5.2** Selected resources about harassment and discrimination in medical institutions

| Recommended resources | Description |
|---|---|
| Muzumdar A. Canadian Association of Physicians with Disabilities. https://www.capd.ca/?page_id=42. Accessed December 22, 2019. | The Canadian Association of Physicians with Disabilities website offers information and resources for healthcare providers practicing with a disability |
| RESPITE. Gender specific considerations in medicine. https://respite.machealth.ca/Integrate_5.html | This website further explores gender-specific considerations for physicians |
| The aging physician: Maintaining competence and practising safely. CMPA. https://www.cmpa-acpm.ca/en/advice-publications/browse-articles/2016/the-aging-physician-maintaining-competence-and-practising-safely | The CMPA offers information on maintaining competence and safe practice standards for the aging physician |
| Rainbow Health Ontario:https://www.rainbowhealthontario.ca | Rainbow Health Ontario provides the latest news, resources, and training modules for healthcare providers. Physicians can also list themselves as LGBT2Q-positive service providers through the website's directory |
| https://www.cmpa-acpm.ca/en/advice-publications/browse-articles/2014/when-medicine-and-culture-intersect | The CMPA offer an outline of cultural competency, cultural safety, and minimizing risk in the healthcare setting and in-patient interactions |
| Society of Physicians with Disabilities. https://www.physicianswithdisabilities.org/ | This is a group within the Society of Healthcare Professionals with Disabilities; an online supportive community to provide disability-related resources and tools that are relevant for medical professionals, trainees, family members, and friends |

(continued)

**Table 5.2** (continued)

| Recommended resources | Description |
|---|---|
| Is it Harassment? A Tool to Guide Employees. Government of Canada. https://www.canada.ca/en/government/publicservice/wellness-inclusion-diversity-public-service/harassment-conflict-resolution/harassment-tool-employees.html | This is a guide that helps in the analysis of a situation one believes might be workplace harassment; it can be used as a starting point to help understand what constitutes harassment. If one is still unsure if the situation constitutes harassment, the person should consult their manager, a departmental harassment prevention advisor, a departmental informal conflict resolution practitioner, the Employee Assistance Program, or a union representative |
| US Equal Employment Opportunity Commission https://www.eeoc.gov/eeoc/ | This Commission is responsible for enforcing US federal laws that make it illegal to discriminate against an employee/job applicant based on race, color, religion, gender identity, sexual orientation, national origin, age, disability, and others |

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# 6

# The Transition to Independent Practice: A Challenging Time Requiring Careful Balance

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## Introduction

The transition to independent medical practice takes place toward the end of postgraduate medical training where medical residents and fellows consider their career transition to unsupervised medical practice. This period presents specific challenges to residents/fellows who have concurrent duties as senior residents/fellows, are focusing on exit exam preparation, and other various commitments (e.g., licensing, business/administrative issues, relocation, job search). In addition, this is a time when residents and fellows begin to consider other aspects of practice (detailed later), such as billing and the business aspect of medicine, which were not a primary focus during residency when acquiring clinical knowledge and skill took precedent.

The transition to independent practice is also a time for self-reflection to determine short- and long-term goals and to examine how one's personal values can be integrated and balanced with career aspirations. Developing a transition plan and accessing credible guidance can help to alleviate some uncertainties. This requires an acknowledgment of limitations and a willingness to seek expertise from other sources to ensure comprehensive preparation. With all of these factors to consider, humanistic principles have the potential to be overlooked; however, a humanistic approach to practice remains particularly important.

This chapter may be applied to transitioning to independent practice in both Canada and the United States. Multiple guides are available to assist in the transition to practice, including those published by the Canadian Medical Association (CMA; www.cma.ca), Canadian Medical Protective Association (CMPA; www.cmpa-acpm.ca), and provincial and territorial Colleges. The College of Family Physicians of Canada (CFPC) also has valuable resources related to transition to practice for family physicians, however, that are applicable to other specialties as well. There is, in particular, a powerful First Five Years group that focuses on transition and support in early practice (www.cfpc.ca/FirstFiveYears). In the United States there are guides presented by the American Medical Association (AMA; www.ama-assn.org/search?search=transition+to+practice) that can assist with this same transition. Figure 6.1 illustrates important personal and professional factors to consider in selecting an independent practice setting [1].

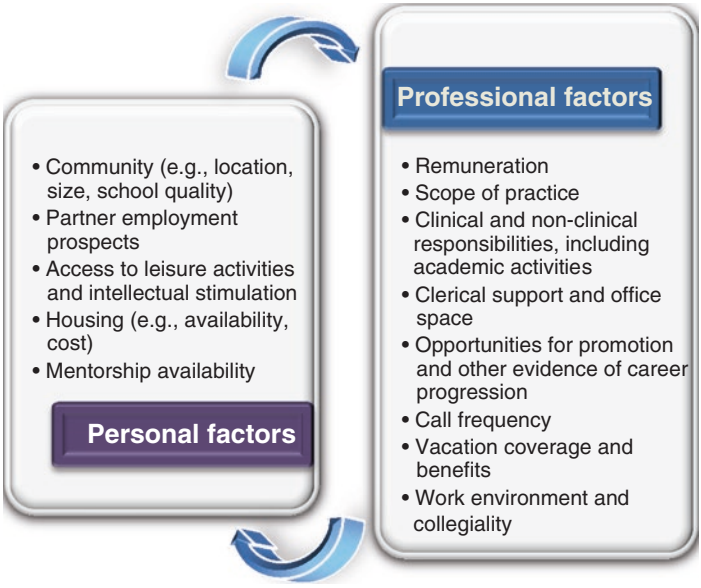


**Fig. 6.1** Personal and professional factors in the selection process of an independent medical practice. (Data adapted from [1])

**Skill-Building Exercise: Pause and Reflect**

What is your *ideal job*? Determine what qualities your *ideal* position would possess.

A helpful technique can be to envision your *ideal* professional career and personal life five years down the line, and not just in the immediate future. Engaging in discussions with family members, professional mentors, and decision facilitators (i.e., someone who assists the physician in their job-seeking process to arrive at their own decision without taking a particular position in the discussion) can aid in this process [1]. It is at this stage of assessing and prioritizing such important issues that early career physicians often have emerging emotional changes, which is considered to be normative and is usually self-limited [1].

Generally, areas of consideration in the transition to practice which will be further detailed in this chapter include [1]:

- Practice structure
- Board certification and recertification
- Taxation and financial planning
- Remuneration and billing
- Legal aspects of medical practice
- Documentation and electronic medical records (EMR)
- Continuing medical education

## Practice Structuring and Opportunities

When considering career planning and opportunities, residents and fellows should consider personal and professional goals, location, remuneration, and practice models. In addition, it is important to complete certain tasks prior to practice; e.g., applying to the regional and national medical licensing/regulatory authorities, the College of Family Physicians of Canada (CFPC), the Royal College of Physicians and Surgeons of Canada (RCPSC), or the American Board of Family Medicine (ABFM) or American Board of Psychiatry and Neurology (ABPN), to name a few. The specific developmental challenges in transition to independent practice for psychiatry graduates have been reviewed [1]. While specifically written from the perspective of academic psychiatry (which may represent a fairly narrow focus), this review may be of value for physicians from all specialties.

### Applying for Certification in the National Regulatory Colleges

Upon starting family medicine residency programs in Canada, residents are registered as resident members of the CFPC. At the end of residency, programs notify the CFPC of the successful completion of the certification exam [1]. The resident is then des-

ignated as a certified member of the CFPC. For specialties and subspecialties, residents complete their certification exam and are invited to become fellows of the Royal College [2, 3]. For physicians completing residency/fellowship in the USA, board certification must be successfully completed before any subspecialty certification can be achieved. Be aware of the 10-year recertification for both specific specialties and subspecialties in the USA; for example, it may be possible to take recertification examinations in one specialty (e.g., general psychiatry) and a subspecialty in a combined examination.

## Applying for a Billing Number

In the Canadian system, billing numbers are required for physicians to be remunerated on a fee-for-service basis [4–7]. After successful completion of licensing exams, physicians are granted license for independent practice. Canadian physicians can then apply for a billing number from the provincial Ministry to submit billing for provided services. Commonly, there is a 6–10 week delay between first billing and payment, so financial planning for the interim period is important. In addition, the application process can be initiated prior to residency graduation with documents of successful certification examination completion sent afterward. Examination results are available prior to finishing residency and physicians can work as independent practitioners as early as the day following the completion of residency.

In the US system, physicians planning to participate in the Medicare and Medicaid programs must apply to these federal programs separately. Those physicians inclined to accept private insurance need to be separately registered with each insurance company they wish to bill. Different insurers often have different paperwork requirements for these qualifications. State licensure is required for practice, although physicians employed by the Department of Defense, Department of Veteran's Affairs, Public Health Service, or other federal agencies need only one state license, not necessarily in the state where they are working.

## Applying for Hospital Privileges

Residents may need to apply for hospital privileges, depending on what their practice location(s) will be during independent practice. This process involves submission of documents and (often) fees to the hospital organization. Advance preparation for the application can prevent delays in starting work [3]. Some large integrated healthcare systems may complete credentialing in a centralized fashion for the whole system, so that applications to each associated facility may be expedited, thereby decreasing the administrative burden to physicians.

### Practice Structure

There are various considerations regarding practice structure, many of which have implications for remuneration, taxation, and workplace obligations. With independent (or solo) practice, physicians have maximum autonomy and control over staffing, resources, services, and other aspects of the workplace. Solo practice requires complete oversight responsibility for management, operating costs, personnel, physical plant, and coverage for leaves of absence and holidays [8].

In group practice, management responsibilities and costs can be shared with colleagues. Proximity may also allow for assistance and coverage from other physicians when needed. Group practice, however, requires agreement regarding shared costs, clinical coverage, scheduling and staffing, partnership/co-ownership vs. employment, and the services provided [8]. There may be opportunities to be employed by an existing group practice with a later option to buy into the practice as full partner. Physicians should thoroughly explore the implications of these options. Extremely large physician groups typically engage a management company or business manager to oversee business activities, though the physician partners exercise significant control over macro-level decisions (e.g., relocation, expansion, establishment of a branch office, contracts).

### Finding Job Opportunities

Depending on a physician's specialty and location, different stipulations may apply to prospective jobs such as billing caps and bonuses [3, 8–13]. Before signing work agreements, it is important to consider longer-term goals to see if they are congruent with resource allocation plans that may occur in the near future, such as hospital relocations or planned service funding changes. Many residents/fellows turn to their program director, mentors, and professional associations as helpful sources of information regarding job availability and future career direction.

Personal and social factors are also important when considering potential job opportunities and practice structure. Physicians with partners face the singular challenge of negotiating two separate employment positions while also attending to personal/social matters. When both partners are trained healthcare professionals, some medical groups are in the position to provide employment for both, which is important to explore. Including the perspectives and needs of loved ones such as spouses and children can aid in the decision-making process and is an important factor in retention. In addition, it is important to consider short- and long-term goals for life outside of work. Moving costs, community resources (e.g., schools, recreation facilities), and the logistics of relocation also factor into career decisions [3].

Locum tenens are shorter-term employment opportunities that allow physicians to try various locations and practice styles for a time-limited contract. This provides the opportunity to evaluate goodness of fit within a community and practice group, meet other practitioners, and appraise future job opportunities [10, 11]. Locum tenens opportunities can be facilitated by engagement with a locum tenens placement agency, which provides the logistics and connections with offices/hospitals/clinics seeking temporary physician coverage. Physician recruiters can provide important services as well. Physician recruiters are very active in most regions across Canada, working with institutions, practicing physicians, and medical trainees to help arrange practice coverage, locum tenens and permanent job finding, employment for

partners, and community considerations (e.g., housing, schools). There may be restrictions in these contracts to be aware of such that permanent hiring by an institution of the locum tenens physician is a contract violation. There are often many opportunities for new physician graduates to take employed positions in hospitals, clinics, and other middle-size to large institutions. Typically these positions offer a guaranteed salary in return for meeting productivity metrics (i.e., bonuses for exceeding productivity targets are typical). Such positions do not require the physician to assume management and administrative responsibilities typical of private practice. These opportunities vary by specialty and over time with societal, political, and educational shifts.

**Skill-Building Exercise: Job Hunting and Self-Reflection**

Self-reflection is an essential skill for your medical career, and it is especially critical when looking for a new job. You can benefit from awareness of your strengths and weaknesses, values and goals, likes and dislikes, in order to enable job search success. As a medical resident, what do you need to consider for prospective career opportunities? Ask yourself the following questions:

- What are my short-term goals? (e.g., career, finances, life outside of work)
- What are my long-term goals? (e.g., career, finances, life outside of work)
- Will I have enough support from colleagues in the practice structure? (independent or group practice)
- Will I have the appropriate resources for documentation and medical record management?
- Will I have adequate administrative staff support?
- Do I have the necessary legal protection for my practice?

### Human Resources and Staffing

Upon entering independent practice, physicians may find themselves in the new role of managing their office. Depending on a physician's needs, administrative considerations include clinic hours, patient volume, technological skill and support, and the patient population being served. Staff within an office include, but are not limited to, receptionists, nurses and other healthcare professionals, administrative assistants, managers, custodial and maintenance staff, billing clerks, and other physicians [14, 15].

Finding staff with the right "fit" is important to support the desired culture of the working environment and team. The hiring process may require a physician skill that is new and for which they have no formal training. In addition to practicing medicine, physicians may need to act as employers and develop familiarity with human resource regulations and other employer responsibilities. These may involve determining staff salary, contributions to Canada Pension Plan (CPP) and Employment Insurance (EI) employee benefits, and analogous taxes in other nations (e.g., Social Security and other federal withholding taxes in the USA), leaves of absence, unions, workers' compensation, and even termination of employee contracts [14, 15]. The practice of compassion and humanism apply to the communication and feedback required to be an effective employer; it is important to acknowledge the work and strengths of staff within the practice, all the while maintaining appropriate "employer" to "employee" boundaries.

## Taxation and Financial Planning

The transition from residency/fellowship to independent practice leads to new considerations regarding financial planning. Given the increased complexity of financial management for an independently practicing physician, it is helpful to hire a team with expertise in key areas of financial management [7, 16, 17]. This team usually includes the following professionals:

- Accountant/tax preparation advisor
- Insurance advisor
- Financial consultant/investment advisor
- Banker
- Attorney

Financial consultants assist with both management of disposable income and debt management planning [7, 16, 17]. They examine current and possible future financial situations, help to set goals, and coordinate plans with other financial team members. Financial consultants follow up periodically to reevaluate any changing needs and goals, and to review previous agreements. They can also help inform difficult decisions that may have specific considerations such as debt consolidation, approach to debt repayment, Registered Retirement Savings Plan (RRSP) and tax-free savings account contributions (and similar financial instruments in other nations), and planning prior to negotiating with banks (e.g., for home or business purchase loans).

Accountants can assist in ensuring accurate recordkeeping, establishment of business and personal accounts, education regarding accounting methods, and planning for adequate funds to cover costs and taxes. Recommendations from peers can also help guide to best fit [7, 18, 19]. Many cities have accountants with a specific interest and expertise in financial matters for physicians; physician colleagues may be able to make recommendations.

## Insurance

Insurance is an important consideration in independent practice. Insurance advisors may be helpful to determine insurance plan options, suitability, changes in premiums, and portability if moving provinces or states is a future possibility.

Disability insurance is commonly purchased early in a physician's career, as one is more likely to be healthier, which has benefits to plan coverage and cost. Premiums vary with level of disability coverage and elimination period. Insurance advisors

can inform trainees of anticipated changes with disability insurance plans following residency [7, 20, 21]. Institutions hiring physicians will typically offer disability insurance covered through employee benefits, though the physician may have the opportunity to separately purchase additional coverage beyond the amount routinely offered.

Other types of insurance that may be relevant in the transition to practice include personal liability, household, personal property and automobile, and critical illness insurance. Some physicians may also want to look into plans regarding practice overhead and group practice insurance. Malpractice insurance in Canada is usually provided through the CMPA; however, it is prudent to ensure that it covers all planned professional activities [7, 20, 21]. In the USA, large institutions will typically cover malpractice insurance for their employed physicians; physicians practicing independently will need to acquire appropriate levels of malpractice insurance on their own. Insurance payers may require malpractice insurance as a condition for participation and reimbursement.

## Incorporation

Incorporation involves the establishment of a corporation as a separate legal entity. In Canada, this process allows for taxation based on corporate rates, tax deferral, and income splitting. Tax deferral allows for income to be taxed at the rate for corporations if not used for personal expenses. These funds can be withdrawn later and are then subjected to the personal income tax rate. In Canada, income splitting allows physicians to divide income to family members to use available lower tax rates that. In these cases, the pay must be for work actually done by other family members and at reasonable compensation rates. Incorporation involves more complexity and associated fees from legal and accounting advisors, so it is important to consult with financial team members to determine if incorporation is beneficial given one's professional and personal circumstances and jurisdiction of practice [7, 22, 23].

## Remuneration and Billing

Following residency, remuneration models and sources of income can become more varied depending on physician practices. The use of certain remuneration models depends on job availability, specialty and practice model, and career goals [4, 5, 7, 24–26]. Commonly encountered remuneration models are outlined below.

## Fee-for-Service

Within the fee-for-service model, physicians in Canada are self-employed professionals who submit billing to the bodies responsible for payment of services. Billing codes and fees for insured services are outlined in the schedule of benefits for each province. Uninsured services are paid by third-party payers such as the patient's insurance company or by the patients themselves. In the fee-for-service model, physicians are responsible for using the most current schedule of benefits and following up rejected billing claims prior to the stale (expiry) date [4, 7, 26]. The US system is generally similar except that a physician needs to know the patient's insurance, be registered with that particular company, and submit claims on their specific reimbursement forms.

Fee-for-service billing involves a diagnostic code and service code. Additionally, procedure codes, special premiums or modifier codes, and incentive bonuses can be added, if applicable. Service codes vary with physician specialty and the context in which the patient was seen, such as inpatient or outpatient settings, follow-up visits, or consultations. Procedure codes can include a technical component or tray fee if physicians are providing equipment and staff for the procedure. Modifier codes are given when the services provided require travel to locations other than the regular workplace or care provision occurs outside of regular hours. Incentive bonuses are provided for specific services as outlined by each provinces and territories [4, 7].

Multiple online applications and organizations can also assist with billing management. These management services can check to ensure billing codes are up-to-date, verify submitted claims,

and follow up regarding rejected billing claims. The extent of services provided depends on the plan purchased by the practitioner. Commonly, costs include an upfront fee and an additional fee for each billing claim submitted [4, 5].

## Enhanced Fee-for-Service

In addition to usual fee-for-service billings, some physicians qualify for additional remuneration. This usually occurs in the context of complex or special-needs cases, interprofessional care, and practice in rural or remote areas [24].

## Alternative Payment Methods

Alternative payment methods allow for remuneration of multiple services including clinical work, attainment of specified outcome or service provision targets, and participation in administration and research. Given these additional considerations, alternative payment methods can be more complex, especially with regard to taxation and when combined with fee-for-service billing. Remuneration can be established for each physician individually or for a group providing services, where the group will distribute payment according to a predetermined agreement for allocation [24].

## Salaries

Salaried remuneration usually involves regular fixed-amount payments from an employer at specific time intervals (i.e., every two weeks, every month, or other established periods). Payment may compensate for clinical work only or may also include other aspects of practice such as research and teaching, depending on the agreement with the employer. Salaries allow for more predictability and can alleviate some of the time-pressures experienced in working with more complex populations and performing

nonclinical work obligations. Practitioners may be required to provide "shadow" fee-for-service billing to demonstrate the services provided. Physicians working for a single employer under a salary model are not considered self-employed. Consulting with financial advisors can help in navigating the taxation implications for specific payment models [24, 25].

## Legal Aspects of Medical Practice

Many residents' ideas of legal involvement in medical practice are usually focused on issues of malpractice liability and patient complaints. Although these aspects of practice are important, attorneys can also be involved in other areas of career planning. When starting a new job or taking over a practice, contracts and other agreements are usually involved. Given the complexity of these documents, consultation with an attorney may be helpful to ensure that physicians understand the terms and implications of the contract prior to signing. An attorney can also help to develop contracts that include predetermined agreements for anticipated situations that commonly arise in practice groups and workplace settings [7, 16, 27]. It may also be useful to have an attorney assist in contract negotiation [7, 16, 27]. However, these authors believe that it is reasonable to have one legal advisor for malpractice professional matters and another for personal aspects (e.g., advice on legal issues relating to starting a practice, review of contracts). In USA, malpractice defense attorneys usually tend to manage only those practice-related liability aspects. Large physician groups typically hire malpractice attorneys to be available to their physicians.

Attorneys can also assist in arranging personal legal documents such as advance care planning in the form of wills, power of attorney, and healthcare directives. Although this may not directly relate to medical practice, having these documents prepared will assist the physician and their family in the case of unexpected events. Additionally, attorneys may also be involved in other areas of early practice through contracts regarding marriage, real estate, and property leasing.

In times when medicolegal assistance is needed, contacting the CMPA and reviewing available CMPA resources in Canada and analogous specialty societies in other nations can provide valuable assistance during times of stress. The CMPA also provides guidance on topics such as disclosure of harm, medical documentation, and other difficult situations. Contacting the CMPA prior to graduation can ensure that there is no interruption in coverage during the transition to practice. Some employers and provincial and territorial Ministries of Health in Canada may also offer partial reimbursement regarding fees for CMPA coverage [27–29].

Finding the right attorney for one's needs is important; similar to physicians, attorneys may also practice with an area of specialization so different attorneys may be required on a career-planning team. Speaking to colleagues, searching medical association resources, and initial meetings with attorneys can aid in the search for legal assistance.

## Documentation and Electronic Medical Records

Accurate, understandable, and comprehensive medical documentation helps to support the care patients receive and also carries medicolegal implications. Residents and fellows already have experience with medical records as tools for documentation of clinical assessments, investigative findings, care plans, and progress. Medical documentation is also key in communication with colleagues taking over care and/or being consulted, particularly in this era of team-based interprofessional care. In addition, medical records may be periodically audited by the governing medical college to ensure that documentation is meeting the standard of care [30, 31]. Documentation-related legal matters are jurisdiction-specific and local specialty societies can offer general advice. For example, in Canada, the CMPA advises physicians to maintain records for 15 years following the last encounter with a patient given that legal claims can be made up to 15 years following an incident. Although regulations vary by province and territory, common practices for keeping records include:

- 10 years after the last patient entry
- 10 years after the patient would have reached age 18
- Until the physician stops practice (may need to transfer records to another physician)
- Notifying each patient regarding the destruction of records in two years unless a request is made to transfer records to another physician [30, 31]

In unsupervised practice, physicians are held legally responsible for their patient records, and precautions to protect patient privacy are needed. Patients also have the right to request their record with timely access and at a reasonable cost [30, 31]. Is it worth noting the trend to move toward direct patient access to their electronic health record/health information, sometimes as read-only but other times for adding or updating information and other times for secure correspondence with their provider.

Skills in the use of electronic medical records is unquestionable for new physicians, as a means for supporting quality of care, more efficient access to and sharing of information, and data management. Choosing the right EMR provider is important and varies based on an individual practitioner's needs, staffing capabilities, and personal preference. Other practical considerations include electronic device availability and licensing fees from EMR providers [30, 31], along with endorsement from professional organizations and compatibility for data sharing with local hospitals, laboratories, pharmacies, and other healthcare database repositories.

In addition to maintaining medical records, proper destruction of documentation is also necessary to maintain confidentiality. It is important to know the local expectations in regard to understanding privacy and confidentiality legislation as related to patients and medical records. Having all who work in the clinic sign agreements to this effect may be advisable. Periodic electronic health record audits for confidentiality/security may also be necessary. Within the hospital setting, document storage, shredding, and destruction may be provided by the institution via confidential waste bins. For those in private practice, numerous companies are available to provide services related to confidential medical record destruction [30, 31].

## Continuing Medical Education

Ongoing education, professional development, and practice evaluation is needed with the dynamic nature of medical practice [32]. To help ensure ongoing professional development, the Maintenance of Certification and Maintenance of Proficiency programs were developed to help physicians track and demonstrate their completion of required activities.

### Maintenance of Certification (MOC)

In Canada, the MOC program is mandatory for fellows of the RCPSC to provide evidence of ongoing development and education. Practicing physicians require the completion of at least 40 credits per year and 400 credits per 5-year-cycle. Time-based activities include conference attendance, practice assessment, and personal learning projects. The credits granted per hour differ according to the activity performed. Additionally, other professional development activities such as reading journal articles, developing clinical practice guidelines, and listening to podcasts also grant credits [2, 32]. Each cycle starts on January 1 of the calendar year. For those starting unsupervised practice, the period between starting practice and the start of the first cycle is considered a bonus period where completed professional development activities can still contribute to the upcoming cycle. These activities and outcomes are self-reported using Mainport website (www.mainport.org). It is recommended that supporting documentation of activity completion is retained [2]. Although this may be different for each specialty in the USA, for example, for the ABPN, initial certification is in general psychiatry. One has to complete residency before being allowed to take the examination; thus, the US residency graduates are "board eligible," not "board certified" until they pass. Subspecialty qualification examinations may be taken after initial board certification. If one is also subspecialty qualified, they may thereafter take the subspecialty board exam. Both general psychiatry and subspecialty certifications, for example, are valid for 10 years in the USA.

### Maintenance of Proficiency (Mainpro+)

CFPC members are required to participate in the Mainpro+ continuing medical education program (www.cfpc.ca/introduction_to_mainpro+). Practitioners require a minimum of 250 credits completed within each 5-year cycle. The credits granted for each activity depends on a physician's membership type and designation in the CFPC [2]. In the USA, there is no national standard and physicians need to follow state law/regulations.

## Maintaining Wellness and Humanism in the Transition to Practice

With the numerous key considerations essential for successful transition to independent practice, it is also important to consider the human aspects of graduation, role transition, and associated situational stress. It is beneficial to continue developing and reaching out to personal and professional supports as well as prioritizing ongoing efforts to care for oneself (See Table 6.1) [1]. Although this can be a challenging endeavor, the recognition of personal limitations is important and encountering difficulties in times of transition is a shared experience among even the most highly organized individuals [33]. Many physicians find the first year post-residency/fellowship to be particularly stressful and there are many legitimate reasons for this. First, the physician has completed a long period of intense effort and sacrifice with expec-

**Table 6.1** Tips for attending to physician's own psychological health during transition to practice [1]

| |
|---|
| Seek emotional support from partner or significant others |
| Participate in recreational activities |
| Nurture professional and personal relationships |
| Foster relationships with peers/ad hoc consultations with colleagues |
| Take vacation or time off |
| Do reading, creative activities, hobbies, and exercise |
| Avoid isolation |
| Get adequate rest and proper nutrition |
| Get a primary care physician |

tations of delayed gratification, "working toward tomorrow" if you will, only to "reach tomorrow" upon program completion and licensure to discover that the stresses are not "less," simply "different." Being in the institutional training setting as a post-residency environment may feature a surprising degree of relative professional isolation, which may come as a surprise given that it has historically been experienced as a setting that provided regular social interaction and support. This can make any clinical challenge (e.g., a particularly difficult case or a poor patient outcome) more difficult to manage. An awareness of this possibility and a willingness to seek support, supervision, even psychotherapy to manage this transition, may be of great help, especially in the first few years of post-residency/fellowship.

**Key Points**

The transition to practice process provides opportunity for the resident/fellow physician to reflect and know themself better both within and outside of their professional role. In the dynamic field of medicine, ongoing changes in practice occur through the implementation of technology and electronic medical records, new tests and treatments, and increasingly complex patient care requirements. Reflection and a supportive team related to professional and personal needs support physicians to tailor their career and life over time to best suit their individual goals.

## Check Your Learning

### Case Study: "Now that I am here, where am I?"

Annie is a 35-year-old physician who is completing her residency in anesthesia. She has two daughters, aged 2 and 4. She is planning to move to a smaller town in another province in Canada to be closer to her life partner's extended family, but she is unsure

about fitting in with the new community. Specifically, she wonders how her daughters will adapt. She is hesitant about signing on to a longer-term job contract as her partner has only seen short-term job opportunities for himself in the smaller town. Annie also has a job offer in the city she is currently completing her residency, where she has spent the past 4 years. She is also unsure how she will like working with a smaller group because she has only worked with larger cohorts throughout residency.

***Question.*** **What do you think Annie could do in sorting through these considerations?**

A. **Elective rotation in proposed community in her last year of training**
B. **Locum tenens**
C. **Meeting with her mentor for advice**
D. **All of the above**

**Answer: D ✓**

*Annie has many considerations regarding prospective jobs. Some residents may pursue electives in their final training years at sites of interest as a way of "testing the waters" in that community. Annie may wish to consult her financial team regarding long- and short-term financial plans and current debt load. She also needs to consider her partner and children to determine the impact of moving and changing communities. She will also need to consider the logistics of moving and registering with the appropriate regulatory bodies in the new jurisdiction. Depending on the types of procedures she plans to incorporate into her practice, Annie should check to ensure that she has appropriate medicolegal protection. A locum tenens position may be helpful to evaluate how Annie and her family will adjust to living in other communities, although this option is associated with the disruption and needed flexibility of potential moves. It is recommended to initiate this transitional planning by the beginning of the last year of residency by contacting department chiefs of clinical service, networking with colleagues, calling on mentors, and consulting the loved ones frequently [1].*

**Key Takeaways**

- Residency/fellowship graduation and transition to independent practice are more of a "process" than a "goal."
- There is *never* a time when one will feel "fully ready and prepared" for any major transition.
- Life and work are not and cannot be made "easy," but thoughtful multidimensional planning can help with the expected difficulties associated with transition.
- Professional and social variables must not be perceived as "competitive" with each other, and must be balanced; the balance challenge is specific to the individual and cannot be delegated to others.
- Call upon appropriate mentor figures and other professionals for advice within their respective realms of expertise.
- Keep a "medium"-term view (i.e., "not too short", "not too long") and always consider your options should a situation turn out to not meet your needs, or if you "outgrow" a situation. This cannot ever be predicted with certainty, and course correction can be achieved along the way, within the proviso of contract obligations.
- Be willing to acknowledge difficulties and seek help.
- Provide support to colleagues who are facing these similar challenges.

## Selected Resources

Table 6.2 shows a few additional resources that may be of interest to residents transitioning into practice.

**Table 6.2** Selected resources for the transition to practice

| Resources | Description |
|---|---|
| American Medical Association Transition to Practice https://www.ama-assn.org/topics/transitioning-practice | It provides useful resources for transitioning from residency to practice in a physician's career in the USA |
| Canadian Medical Protective Agency https://www.cmpa-acpm.ca/en/home | It is an organization protecting the professional integrity of physicians and promoting safe medical care in Canada |
| Alberta College of Family Physicians First Five Years Toolkit https://acfp.ca/membership/member-support/first-five-years-in-family-practice/first-five-years-resources/first-five-years-toolkit/ | It is a toolkit of all the resources and tools that may assist residents during the training years in Canada |
| Joule Practice Management Curriculum https://joulecma.ca/learn/practice-management-curriculum | Joule provides the nonclinical skills a resident would need to transition into practice. This resource offers a series of seminars for family medicine and specialty residents in Canada |
| Canadian Medical Association (CMA) New in Practice Guide 2017 https://www.cma.ca/new-practice-guide-2017 | This resource is a CMA member benefit that provides physicians with useful information about new career, including the financial, legal, and administrative matters |
| MD Financial Management Services https://mdm.ca | It supports financial well-being at every career stage of physicians in Canada |
| Joule CMA Checklist Of Things To Do Before Starting Practice https://joulecma.ca/sites/default/files/2019-04/Joule-Checklist%20for%20end%20of%20residency-FM-2019.pdf | It is an itemized checklist of things to do before starting practice (family medicine) |
| Joule CMA Practice Evaluation Checklist and Action Plan https://joulecma.ca/sites/default/files/2018-10/Evaluating-Practice-Options-Checklis-and-Action-Plan.pdf | It is a practice evaluation checklist and action plan to do before starting practice in Canada |

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# Part II

# The Foundation of Maintaining Physician Resilience

# 7

# Stress Awareness and Management in Medical Settings

Jelena P. King, Elena Ballantyne, and Heather E. McNeely

## What Is Stress?

Stress is an adaptive response to any demand and the body's natural defense system to protect us from danger and/or prepare to either confront or avoid the stressor. This defense system is a hardwired process that triggers a multifaceted sequelae of physiological and psychological processes that are adaptive in the short term but can be detrimental if activated for prolonged periods, particularly in cases where the stressor becomes persistent and chronic.

The process of how the body responds to stress, whether it is acute (short term) or chronic (long term), is termed allostasis [1].

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The acute stress response is known as the "fight or flight" response, which happens when individuals experience threat [2]. The fight-or-flight response causes the body to release several stress hormones (e.g., cortisol, adrenaline) into the bloodstream that intensify attentional focus, ability to react, sense of urgency, and physical power/strength. Additionally, heart rate and blood pressure increase, and the immune system and memory become sharper. All of these physical, hormonal, and emotional reactions work in a coordinated and rapid sequence to increase our ability to cope, and avert harm, danger, or failure. However, after the short-term stress has been dealt with or is over, the body then returns to normal resting state of homeostasis.

Stressors can be both physical and psychological in origin (See Table 7.1) [3]. While physical stressors such as exposure to cold, heat, infection, and toxic substances pose a direct threat to our physical well-being, psychological stressors challenge our safety in different ways. Psychological stressors are not physically dangerous but often vary as a function of the subjective interpretation or meaning that the stressor elicits. The nature of our subjective interpretations will determine whether this will give rise to thoughts and/or feelings that will serve to maintain the chronicity of the psychological stressor as it relates to perception of safety or well-being or whether sufficient coping skills can be recruited to manage or mitigate the stress. In this vein, unlike physical stressors or threats which are often more acute and short lived, psychological stressors have a greater likelihood of keeping the body's stress response alarm system (i.e., fight-or-flight) turned "on." When the stress response system stays on over prolonged periods, this maintains a state of heightened physiological and psychological arousal that signals to the brain that the threat is still present, making it more difficult to turn the system "off" and reset the

**Table 7.1** Types of stress

| Physical | Psychological | Psychosocial |
|---|---|---|
| Trauma (injury, infection) | Emotional | Relationship difficulties |
| Physical overexertion | Cognitive | Lack of social support |
| Illness (viral, bacterial) | Perceptual | Loss of employment |
| Sleep deprivation | | Death of loved one |
| Dehydration/diet restriction | | Isolation |

alarm to a normal and relaxed state which is necessary to build resilience and maintain physical and psychological well-being over the long run. In this regard, when stress is chronic or long term, the body reacts as if it is constantly facing threats or challenges, maintaining high levels of physiological arousal and stress hormones, which over time, reduces the body's ability to recover or bounce back, and can lead to serious psychological and physical health problems.

## Psychological Stress

The stress response that results from subjective appraisals of threat in our environment in the absence of any real physical threat is considered a *psychological stress response*. This is often the case when we encounter events or situations that are perceived or appraised as threatening to our well-being and exceed available coping resources. Because psychological stressors achieve their threat value not through their physical ability to do harm but rather through their appraised threat value, psychological stressors will not be equally stressful to all persons, and there is often significant variability in people's ability to cope and manage these perceived stressors. However, the physiological systems that respond to psychological stressors (fight-or-flight response) are the same ones that react to physical threats. Psychological stress that can be associated with the high demands of medical training (often requiring long work hours, exposure to illness, and human suffering) is often a routine part of a resident's daily experience. Because of its routine and often prolonged occurrence in medical training/medical settings, psychological stress will likely be experienced as more constant/chronic rather than acute or traumatic stress, and the body and alarm system will get no clear signal to return to normal functioning. In these cases, there might not be a conscious awareness of the experience of psychological stress, which instead manifests in the onset of physical symptoms (see Table 7.2 for examples of common physical symptoms) rather than an active awareness of the underlying emotional or cognitive processes that are likely activating and contributing to the maintenance of the stress response (Table 7.2).

**Table 7.2** Common symptoms associated with stress

| Physical | Psychological/emotional | Mental/cognitive difficulties |
|---|---|---|
| Low energy | Irritability | Recent memory |
| Headaches | Anger | Working memory |
| Fatigue | Sadness/depressed mood | Concentration |
| Chest pain | Anxiety | Sustaining attention |
| Rapid heartbeat | Anger | Alternating attention |
| Muscle tension | Detachment | Multi-tasking |
| Physical overexertion | Apathy | Processing speed |
| Gastrointestinal problems | Emotional liability | Reaction time |
| | Feeling "on the edge" | Decision making |
| Body aches and pains | Hypersensitivity | Organizing |
| Agitation | Negative thinking | Planning |
| Sleep difficulties | Distraction/being preoccupied | Initiation |
| | | Goal-oriented behavior |
| | Self-doubt | Completing tasks |
| | Reduced self-esteem | |

**Key Point**

How one handles stress is a learned skill and will vary as a function of emotional reactivity whereby highly reactive people will often perceive even a relatively minor disturbance as if it were a crisis leading to greater physiological arousal and activation of the "fight-or-flight" response. If repeatedly activated, the physiological arousal that accompanies these stress reactions can lead to a self-reinforcing effect on one's thinking and emotional processes (escalating negative thinking/mood states). If left unmanaged, eventually the "fight-or-flight" response can be activated by a single negative thought or negative mood state in the absence of a discrete stressor. In this vein, the physiological stress response can be triggered by thoughts or emotions one might be experiencing in reaction to a situation, or when remembering or ruminating about previous stressful

situations, in the absence of any actual or current physical threat. This process is heightened and reinforced in highly reactive individuals and puts them at greater risk for developing mental health and physical conditions. In this regard, the great physiological dilemma of stress is that we so often mobilize our bodies involuntarily for fight or flight and yet we so seldom carry through the process in physical terms. This results in sustained physiological arousal maintained by psychological factors, which if left unmanaged can be detrimental to mental and physical health.

## Increasing Awareness of Stress

Residency and medical training is often a stressful and demanding experience. Residents are required to work long hours, take on tremendous responsibility, and carry the expectation to manage multiple demands, while being exposed to human suffering and disease, all the while simultaneously managing the enormous pressure that comes with professional development and being evaluated in order to master the level of expected skill and competency needed to practice autonomously. Intense psychological and emotional demands are, therefore, an inherent part of the resident work environment and can in many ways be considered a form of routine and frequently encountered stress associated with medical training. Intense psychoemotional demands can become an ingrained aspect of working within the medical field and internalized as a "normal and expected" part of the work and training environment. Over time, the extent and impact of this psychological or emotional stress may become harder for residents to recognize or notice. Indeed, conscientious and achievement-striving residents will likely have a greater proclivity to persevere and work harder within a demanding and high caliber training environment rather than address their emotional or psychological experiences by implementing self-care and adaptive coping strat-

egies to mitigate that activity of the physiological stress response system, something that might be perceived as a sign of personal weakness. Residents perhaps would also be less likely to self-disclose such difficulties to their supervisor. Because significant variability exists among individuals' ability to recognize the experience of stress (likely the result of a complex interaction between the magnitude or type of stressor being experienced, personality factors, genetic vulnerabilities, and coping styles), this can place some residents at risk of developing serious mental and physical health problems as the body will get no clear signal to return to normal homeostatic levels, leading to eventual burnout [4].

## Recognizing Burnout

As detailed elsewhere in this volume (See Chap. 10, "Recognizing Compassion Fatigue, Vicarious Trauma, and Burnout"), burnout can be conceptualized as a progressively developed condition resulting from the use of ineffective coping strategies with which professionals try to protect themselves from work-related stress situations [5]. Three dimensions of burnout have been identified – emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, and are considered the core of the burnout syndrome (reviewed in more detail in Table 7.3) [7].

Burnout is psychosocial in origin and often the result of enduring prolonged stressful working conditions. Increasingly, research is demonstrating that residents experience high rates of burnout that develop cumulatively over an extended period of time [8, 9]. Ishak and colleagues reviewed literature that revealed that residents, especially in the early years of training, are particularly vulnerable to burnout, with prevalence rates ranging from 27% to 75% [4]. The demand-control support model proposes that occupational stress causes burnout when job demands are high while perceived individual autonomy is low, and when job stress interferes with home life [10]. Notably, all of these factors can be com-

**Table 7.3** Recognizing the signs of burnout

| Dimension of burnout | Associated symptoms |
|---|---|
| *Emotional exhaustion*: emotionally overextended and exhausted | Emotionally drained<br>Increased frustration/irritation<br>Awareness of working too hard<br>Work seems more effortful |
| *Depersonalization:* having an unfeeling and impersonal response toward work/others | Reduced patience<br>Reduced empathy<br>Uncaring behavior toward others<br>Becoming cold and cynical |
| *Personal accomplishment:* reduced feelings of competence and successful achievement | Growing sense of inadequacy<br>Worries about work performance<br>Feeling ineffective and incompetent<br>Decrease in work effectiveness |

Adapted from the Maslach Burnout Inventory (MBI) [6]

monly experienced in residency where the demands of working long hours, the nature of work required, and ultimate decision-making can often fall outside of the resident's control. Left unchecked, sustained burnout can undermine optimal physician-patient relationships and the professional satisfaction of residents and contribute to increased risk for carelessness and lack of commitment, which can present risks to patient outcomes [11–13].

**Did You Know?**

*The Maslach Burnout Inventory (MBI) is by far the most widely used, accepted, valid, and reliable measurement tool of stress and burnout. The 22 total items are broken up into the three themes with nine items relating to emotional exhaustion, five to depersonalization, and eight to accomplishment as shown in Table 7.3. Each item is also rated on a frequency and intensity scale. The frequency scale ranges from zero (never) to six (everyday). The intensity scale ranges from one (never) to six (very strong).*

## Distinguishing Between *Pressure* and *Stress*

Stress develops when an event is appraised as significant or meaningful for well-being but taxes or exceeds the coping resources that are available to an individual [14]. According to Weisinger and Pawliw-Fry, it is important to understand and make a distinction between pressure and stress as it manifests differently within our personal and professional lives and is best managed with different courses of action within these domains [15]. Pressure, unlike stress, is *the situation* one might find themselves in where something is at stake and demands for adaptation to optimize performance as the outcome of the situation is dependent on the level or quality of one's performance. In evolutionary terms, this would correspond to moments of survival where the lives of our ancestors depended on the outcome of their performance (e.g., whether one was able to throw a spear with sufficient force and accuracy needed to take down prey when hunting for food). In modern times, pressure situations are much less related to survival but rather to whether we succeed or are set back in something that is perceived as important. This is different from stress which is a set of biochemical conditions within a person's body that coordinate the body's attempt to make an adjustment. Within this distinction then, stress can be considered as *the person* while pressure is *the situation.*

**Skill-Building Exercise: Is It *Stress* or *Pressure?***

Weisinger and Pawliw-Fry recommend asking yourself the following questions to make the distinction between stress and pressure when feeling overwhelmed:

> Am I feeling overwhelmed by the demands upon me, *or* do I have to produce a specific result?

If your answer is the former, a feeling of being overwhelmed, too many demands, and not enough resources,

you are experiencing *stress*. However, if you are in a situation where you have to provide a certain level of performance that is important to an outcome, then you are experiencing *pressure.*

Making the distinction between stress and pressure is important because it can help reframe how we conceptualize what we are experiencing so that we can react more proportionately to the kind of situation we are facing. Failure to distinguish pressure from stress can lead to even minor inconveniences (e.g., being late for a meeting, being held up unexpectedly) being perceived as important when in fact, it has minimal impact/ramifications on overall productivity or success in the long term. When minor stressors are perceived as pressure situations, it needlessly intensifies and elicits emotional reactivity that is often out of proportion to the actual circumstances. Continually confusing "day to day stress" with "pressure" can also lead to cognitive distortions, whereby everyday demands and inconveniences become magnified and catastrophized. This interferes with realistic and balanced thinking, reduces resilience, and decreases actual performance as important psychological and physical resources are depleted. Without proper management, this increases chances of burnout.

Since some level of performance pressure is an inherent part of medical practice, gaining insight into how pressure affects you and learning how to manage reactions to decrease stress will improve resiliency, performance, and work satisfaction. The ability to reduce inappropriate reactions to stress and pressure is a learned skill. Some strategies to reduce stress and pressure include learning to control/change distorted thinking, reduce physical arousal, and decrease impulsive action. For example, understanding the distinction between stress and pressure can translate into no longer saying "I am under a lot of stress lately" but rather, "I am under a lot of pressure lately" as when we are talking about stress, it is us talking about our physiological

reactions and feeling, rather than about the situation we are trying to cope with [16]. This can open up different avenues for stress reduction rather than simply accepting the situation. You can choose to remove yourself from the pressure situation if you have developed an unacceptable level of stress in response to that pressure, you can make changes to the situation to attenuate it, or you can teach yourself to react less intensely to many situations, thereby decreasing the stress that you feel. Other strategies to help in managing high pressure situations and reducing stress are listed in Table 7.4 .

## Common Types of Stress Encountered in Medical Settings

In 1979, Karl Albrecht described four common types of stress encountered in the workplace, as further outlined below [16]. Almost 20 years later, this continues to be applicable to modern workplace and medical training settings. These four commonly encountered situations are highlighted in the following case vignettes which illustrate key concepts that can help resident physicians increase their awareness of these potential stress situations and learn how to manage them.

### Case "Not Enough Time"

Allison is a third-year psychiatry resident currently completing a rotation in acute psychiatry where she is responsible for the medical management of 12 inpatients on a 24-bed inpatient unit alongside her supervisor, a senior psychiatrist who has worked at the hospital for over 30 years and has a reputation for being "demanding" and having high expectations for his residents. Prior to starting the rotation, Allison was already prepared for and anticipating the high work demands of the unit and her supervisor, having been warned by more senior residents that managing the workload was a challenge. Allison, who is highly competitive and hardworking, is eager to put in "110%" as she has previously

**Table 7.4** Managing high pressure situations at work to optimize performance

| Consider | Rationale |
|---|---|
| Thinking of it as a challenge/not life-or-death | Seeing pressure as a threat undermines your self-confidence; elicits fear of failure; impairs your short-term memory, attention, and judgment; and spurs impulsive behavior, and saps energy |
| Remembering second chances happen | Focusing on the singularity of an event multiplies stakes, puts self-esteem on the line, and worsens feelings of risk and loss |
| Focusing on task not outcome | Worrying on an outcome rather than the task can lead to losing perspective and an inability to recognize or manage the steps necessary to succeed |
| Letting yourself plan for the worst | Anticipating the unexpected or "worse-case scenarios" can allow you to be prepared so that you are not startled by the unexpected and can instead maintain your composure |
| Taking control | Focus on factors you can control rather than those you do not. Focusing on "uncontrollables" intensify the pressure, increase your anxiety, and ultimately undermine your confidence |
| Practicing | Desensitize yourself from the discomfort of pressure by not avoiding it, but rather practicing tolerating the anxiety and distressful feelings that often come up in pressure situations |
| Remembering past successes | If you did it before, you can do it again. Remembering past successes will ignite confidence so that you will feel better about yourself and better able to manage anxiety |
| Remaining positive before and during | Cultivate a positive attitude. Believing in a successful outcome can prevent or minimize worry that is draining, distracting and counterproductive |
| Focusing on the present | To depressurize situations, focus on the here and now by tuning into your senses (sight, sound, hear) or by taking a deep breath |
| Slowing down | It is natural to speed up your thinking and to jump to conclusions in high pressure situations. Slowing down allows more time to think flexibly, creatively, and the quality of work will be better |
| Sharing the pressure | Sharing your feelings allows you to examine them. It may also normalize your experience when others feel similarly |

Adapted from [15]

excelled in high pressure and demanding environments and often felt exhilarated by the challenge. In addition to her clinical demands, Allison also serves as the resident representative on several committees, is part of a recreational volleyball team two evenings per week, and has an hour daily commute to the hospital. Allison integrates well with the multidisciplinary team members when she starts her rotation and is initially flattered when her supervisor delegates a great deal of work to her. She also appreciates his hands-off approach, allowing her to make important clinical decisions often with minimal input from him and he starts to be less present on the unit. Instead of feeling concerned regarding her supervisor's unavailability, Allison's confidence increases, she becomes the "go-to person" for most clinical issues, but she starts to find herself becoming increasingly spread thin on the unit. Clinical staff start to look to Allison to make critical clinical decisions in the absence of her supervisor. Over several months, Allison starts to notice that she is experiencing greater and greater difficulty managing her workload as she is often managing clinical crisis situations. She is also routinely and increasingly being interrupted by staff which affects her ability to complete electronic documentation in a timely fashion. She is starting to have to stay late most evenings to finish what is required which has meant having to disappoint her volleyball team by either being late or not being able to make it to her games. While she continues to find time to manage her committee work, she is often zoned out in meetings, contributing less, and has had greater difficulty keeping up with communicating the outcome of these meetings to her fellow residents. The hands-off approach that she initially appreciated from her supervisor has now become a burden due to her increased responsibility with little support. She starts to feel resentment and anger toward the clinical staff on the unit but is also conflicted with fear of failing them and she finds herself starting to worry that she is not making the best decisions. She is now constantly worrying about deadlines and is starting to feel trapped by the magnitude of responsibility but is unable to assert herself with her supervisor to ask for more help or delegate work for fear she will be perceived as "lazy." Allison starts to feel like she is not

performing to standards both in her professional and personal life, which serves to further compound her anxiety, and she is now starting to procrastinate and avoid, leaving many things to the last minute.

## Case Analysis

The case vignette of Allison illustrates the emotional and psychological reactions typically experienced by individuals who are experiencing *time stress*. Some of these include feeling overwhelmed and worrying about deadlines/time, rushing to avoid being late, and fears of failing to achieve something important/meeting performance standards leading to common emotions such as feeling trapped, unhappy, resentful, ineffectual, or even hopeless. As in Allison's case, time stress can develop when individuals face increasing obligations, responsibilities, and demands across both personal and occupational spheres that over time can come into direct conflict. Individual factors such as high competency needs and perfectionism can contribute to individuals such as Allison coming by this honestly as they naturally gravitate to taking on more responsibility with enthusiasm that can over time insidiously become unmanageable as one becomes aware of how thinly spread they are across competing demands. This can contribute to negative self-perceptions of reduced productivity, efficiency, and competency because understandably, it will become harder to realistically maintain the high standards of performance that individuals such as Allison often expect of themselves. In this vein, there might be a proclivity to become self-blaming about the perceived inability to cope rather than take a realistic appraisal of the situation which would allow one to determine that proactive measures are necessary to reduce or reconfigure work load rather than persevere in a work/personal life time imbalance that is not tenable and erodes resiliency.

Two interventions that can help manage time stress are assertiveness and utilizing time-management techniques. Allison was eventually able to take control of the situation by becoming more assertive with her supervisor and starting to respectfully say "no" as well as request more supervisory support, which effectively

**Table 7.5** Time management strategies to manage time stress

| Consider | Rationale |
|---|---|
| Goal setting | Provides structure and purpose to time management<br>Consider creating short-term goals as steps toward achieving longer-range goals that will allow one to manage time better and reduce stress |
| Assessing use of time | Once goals have been identified, assess the use of your time. This allows one to determine how you currently spend your time compared to your ideal use of time<br>It is important to gather objective use of your time using a time-management log or some form of time tracking software to record your time |
| Planning time: be proactive, not reactive | Are you a planner or do you react and jump from crisis to crisis?<br>Being proactive means that you are planning your time which allows you to focus on your priorities and will reduce execution time and quality of work |

reduced her workload to more manageable levels. By being assertive, Allison was able to start sharing the workload more equitably with her supervisor. This then reduced resentment toward her supervisor and the treatment staff, whose demands on Allison's time naturally started to decrease because her supervisor was now more available on the unit. Time disruption from staff also started to attenuate so that Allison could eventually resume a realistic level of productivity with respect to keeping up with charting and paperwork that left her more time for her recreational activities. Being more assertive allowed Allison to reduce and reconfigure what was becoming an unrealistic workload in her work setting. Allison also started implementing time-management techniques to help manage her time more broadly that allowed her to more effectively reduce/manage her stress on an ongoing basis. Because the most common causes of time stress is the lack of time, time-management techniques enabled her to use time more effectively so that her work became more efficient in the time that she did have. Other time-management strategies that can help Allison as well as other residents manage time stress are listed in Table 7.5.

## Case "Waiting for the Other Shoe to Drop"

Sam is a third-year resident in emergency medicine at a prestigious teaching hospital. Over the past several months, he has seen a higher number (than what is typical) of trauma cases, resulting in death, which has resulted in longer hours with fewer breaks and greater demands with respect to required documentation and consultation with senior staff. Priding himself on his ability to quickly assess a clinical situation and effectively manage it, on one particular evening, several of his clinical experiences have not gone as smoothly as he would have liked. At the beginning of his shift, managing a number of behaviorally dysregulated patients with major neurocognitive disorder was slightly more challenging, one of whom was particularly verbally abusive toward him and eventually had to be physically restrained after he spat and lunged at Sam. Sam was able to regain his composure and stay focused on what needed to be done to stabilize the patient but noticed that he was somewhat shaken from the experience after it was over, something that was surprising to him as he was not easily rattled in such scenarios. Soon after, an ambulance arrived with an unconscious motor vehicle accident victim who appeared to have sustained significant head trauma and physical injuries. Sam worked diligently alongside his supervisor and assisting staff to help stabilize the situation but eventually the victim, a young male who reminded him of his brother, succumbed to his injuries. Sam was praised by his supervisor for his clinical decision making and interventions noting that he had done "everything right" and that the outcome was not the result of something he "had not done" but rather due to the extent and severity of injuries. While Sam appreciated his supervisor's feedback and could rationalize the outcome based on this interpretation, he has started to question himself about whether he might have been able to do something differently to save the boy's life. He is surprised by his emotional reactivity and has started to experience stomach upset and difficulties sleeping (waking up frequently and being unable to fall back asleep). This has led to increased fatigue during the day and an overall sense of feeling more rundown than usual. Sam is now aware of feeling quite tense and anxious in anticipation of the next

emergency he will have to face. He has lost confidence that he will make the correct clinical decision and is now constantly worrying that something will go wrong with his next patient. Having a successful clinical outcome with a patient does little to reassure him and reduce his worry about future negative outcomes and overall sense of dread that something will eventually go wrong again.

## Case Analysis

The case vignette of Sam illustrates the emotional and psychological reactions typically experienced by individuals who are experiencing *anticipatory stress* or *anxiety*. Anticipation by dictionary definition refers to "the act or state of looking forward to some occurrence" (Webster dictionary). As in Sam's case, ruminating about the traumatic outcome of the emergency patient despite his best efforts to save him has contributed to Sam anticipating vague and nonspecific negative outcomes in his future clinical encounters. While anticipatory stress can be focused on a specific event, in Sam's case it is vague and undefined as he has started to experience an overall sense of dread at work that *something* will go wrong with one of his patients, even though there are numerous instances of successful outcomes. If he focused on the successful outcomes, this could lead to more balanced and realistic thinking and a reduction in anticipatory stress. Left unchecked, Sam's anticipation of negative outcomes and incompetency have now in many ways become more stressful than the clinical encounters he continues to have to manage on his shifts. For many individuals like Sam, the situations that cause the most anticipation stress are usually the ones we are most invested in and where there is some degree of uncertainty. The likelihood that both of these conditions will be met within a medical training environment is high, and therefore, residents, like Sam, can expect to experience some level of anticipatory stress in their workplace.

As highlighted in an earlier section of this chapter, the physiological reaction known as the stress response can be activated by thoughts or emotions that are experienced in reaction to a situation in the absence of any real physical threat. In the case of Sam, his psychological interpretation of events contributes to a high degree of emotional responsivity that is now experienced and maintained even *in the absence* of a high-pressure situation, such

as the initial emergency of the car accident experience. Sam is now starting to experience the physical symptoms associated with stress which in combination with his psychological symptoms perpetuate the negative cycle of anticipatory stress that serves to further erode his adaptability and resilience to manage future high-pressure situations effectively. Eventually Sam came to the conclusion that he needed help to manage his anticipatory anxiety as he started to avoid shifts by calling in sick which was not like him and served as an alarm bell that something was wrong. He was also particularly concerned when after returning to a shift after being off for several days, his anxiety and worry was heightened rather than attenuated illustrating how avoidance behavior actually strengthens rather than attenuates anticipatory anxiety/stress. He was able to gain control over his anxiety by learning several coping strategies that are known to be effective in reducing anticipatory stress, which included implementing relaxation techniques, self-compassion (to normalize his fears in the context of his high-pressure training environment), healthy distraction, facing his fears by reducing avoidance, and identifying and changing faulty *thought* patterns that perpetuate the negative cycle of anticipatory stress he was experiencing *(Table 7.6)*.

**Table 7.6** Strategies to manage anticipatory stress/anxiety

| Consider | Rationale |
|---|---|
| Relaxation | Meditation, guided imagery, and deep breathing can temporarily shift focus to the present and away from distressing emotions and thoughts and can reduce anticipatory stress |
| Self-compassion | Offer yourself kindness and support as you would to a friend or patient struggling with similar issues. This serves to normalize the universal struggle human beings have with managing uncertainty that is at the core of anticipatory stress |
| Distraction | Healthy distraction activities such as exercise, listening to music, and engaging in other pleasurable activities can shift attention from rumination that often perpetuates and maintains anticipatory stress |
| Identifying thoughts | Identifying what the fears are that drive anticipatory stress can help reduce avoidance behavior and change faulty thought patterns that perpetuate the negative cycle of anticipatory stress |

## Case "Managing the Unexpected"

Joanna is an internal medicine resident on a cardiac inpatient unit in an inner-city community hospital where there is a high immigrant Portuguese population. Joanna's Portuguese heritage and fluency with the Portuguese language has been a tremendous asset for her work on the unit as she has been able to navigate the frequent communication barriers encountered with elderly ill patients with limited English by providing translation to explain complex medical procedures and communicate diagnosis and prognosis. She also has a remarkable bedside manner and interpersonal skills and is highly regarded by the treatment staff, her supervisor, and her patients. Having now been on this rotation for several months, Joanna has increasingly been called upon to provide translation for her patients as well as on occasion, to those of her fellow residents and supervisor, providing she has the time and is available. Although Joanna has at times felt burdened by these requests, she is highly conscientious and agreeable and can always rationalize her difficulty "saying no" with her genuine concern regarding the welfare of elderly Portuguese patients whose distress she can often alleviate by speaking to them in their native language. On one particular shift, Joanna is managing several crisis situations with her patients when she is approached by a more senior resident requesting translation help with one of his less urgent patients. Joanna is agreeable to help him but communicates that it will have to wait until she has stabilized her patients. Her fellow resident appears satisfied with this arrangement and acknowledges that he will expect Joanna to come find him as soon as she is finished. After Joanna has completed all her clinical responsibilities, she is unsuccessful locating the senior resident but is reassured by staff that it "was likely nothing urgent" and "could wait until the next day" as both the resident and supervisor have left for the day. Joanna leaves the hospital and returns the following day where she encounters her resident colleague and shared supervisor at their morning team triage meeting. Joanna perceives some tension in the room when she arrives, noticing that the senior resident is not making any eye contact with her and that the nurses are unusually quieter. As the meeting begins, the super-

visor sternly addresses Joanna regarding his perception of her failure to translate what he perceived was important information for the patient to have received the day prior. Her supervisor's reaction takes Joanna completely by surprise in the context of the previous conversation she had had with the senior resident. She becomes aware of a tightness in her chest as anxiety sets in and her face becomes flushed. Typically, articulate and assertive, Joanna finds herself unable to regain composure to explain the circumstances and defend herself. She becomes flooded with shame and guilt (for potentially having failed the patient and contributed to their distress) as well as anger for being addressed so rudely in front of her team and being blamed for something she did not see as her ultimate responsibility. Throughout this exchange, the senior resident does not come to her defense and explain the arrangement the day prior, which simply fuels Joanna's disappointment further.

## Case Analysis

The case vignette of Joanna illustrates the emotional and psychological reactions typically experienced by individuals who are experiencing *situational stress.* Instances of situational stress are often sudden and unexpected because the situation encountered has not been anticipated. In Joanna's case, she is encountering conflict which is the major source of situational stress in a work setting. Unanticipated conflict in the workplace can be perceived as psychologically threatening depending on the circumstances. In Joanna's situation, her physiological stress response was immediately triggered by the sequelae of thoughts and emotions that accompanied her experience, and she experienced a surge of physical stress reactions that served to reduce her ability to effectively manage the situation in the moment. In the demanding and high-pressure environment of resident training, work-related conflicts such as the one experienced by Joanna can be routinely experienced by practicing physicians and resident physicians that can be aggravated by the hierarchical structures implicit in residency training and has been identified as an important area of concern [17]. Some of the factors that have been identified as contributing to these conflicts include differing goals and

**Table 7.7** Strategies to manage situational stress

| Consider | Rationale |
|---|---|
| Practice assertiveness | Consider expressing your perspective, needs, and feelings, while also considering the perspective, needs, and feelings of others rather than passively (putting others needs first) or aggressively (putting your needs first) |
| Manage emotions | Recognize the automatic physical and emotional signals your body sends when you are experiencing situational stress. Activities to stop the emotional escalation such as anchoring awareness to breath or removing yourself from a situation temporarily to regain composure can attenuate emotional distress |
| Conflict resolution | Consider collaboration or actively looking after your own interests but not losing sight of the interest of others rather than avoiding, accommodating, or competing in a conflict situation |

individual differences, problems with communication and feedback, power and rivalry, lack of support and collegiality, and the absence of role modeling and expertise [18].

Joanna utilizes several techniques to help her manage her situational stress constructively (Table 7.7). Initially, Joanna eventually asked to be excused from the meeting and left the room to calm down and compose herself as she was acutely aware of the automatic physical and emotional reactions she was experiencing in the moment that were interfering with her ability to communicate effectively. Removing herself from the conflict temporarily in addition to engaging in deep breathing served to reduce her physiological arousal as well as deescalate her distressing emotions and negative thoughts. These initial strategies helped Joanna regain her composure and rationality so that she was eventually able to return to the meeting feeling less emotionally reactive. Next, Joanna considered the different ways she could handle the conflict. She considered ignoring what happened and avoiding it altogether, apologizing and accepting that this was her fault, or becoming argumentative and pointing out how unfair this is. She realizes that these approaches would be destructive rather than constructive. Instead, she eventually requests a private meeting with her supervisor and senior resident so that she

can assertively communicate her perspective and feelings regarding the incident in an effort to resolve the conflict rather than escalate it. By choosing to resolve the conflict in a constructive rather than destructive manner, Joanna was able to clarify the sequence of events from her perspective and resolve any misunderstandings. Managing situational stress in this constructive manner resulted in Joanna resolving the problem, increasing her confidence and ability to manage conflict, and helped her feel unified with the treatment team which was important for Joanna with respect to sustaining her satisfaction and commitment to her work and productivity.

## Case "The Cost of Caring"

Ben is a senior family medicine resident completing his rotation on a geriatric assessment unit in a teaching hospital. Ben is known as a competent and caring resident who is highly responsive to his elderly patients, whom he perceives as emotionally and physically vulnerable as many are often struggling with medical conditions, including major neurocognitive disorder (dementia). Over the past several weeks, Ben has been caring for a frail 70-year-old widow named Joyce, who was admitted for "failure to thrive" following the sudden death of her husband whom she had been married to for 50 years. Ben recalls the day she was admitted as an involuntary patient presenting with limited insight, delusions that her husband "was killed," and a general paranoia and suspiciousness toward the staff that often resulted in disruptive behaviors on the unit (striking out at nurses, refusing to take her medication, and yelling at co-patients who she was convinced were part of the conspiracy that killed her husband). Joyce's medical condition was stabilized and psychotic symptoms abated although she remained convinced that her husband's death was the result of "some sort of foul play," the details of which she was uncertain of. Eventually, Joyce was diagnosed with early stage Alzheimer disease as a result of Ben's observations of persistent memory impairments despite her improved mental status. By then, Joyce had formed a strong emotional connection with Ben, which was

mutual as Joyce reminded Ben of his late grandmother whom he was very close to. Joyce also appeared to have quite a strained relationship with her adult children. Ben was often surprised in the change he observed in Joyce when she interacted with her children, where she became argumentative, irritable, and demanding which was significantly different from her sweet and friendly presentation with Ben. Nursing staff also noticed that after these visits, Joyce was often rude and dismissive toward them when they checked in on her. While the treatment staff generally found Joyce to be demanding and perceived her displays of grief as attention seeking, Ben saw it as a normal part of grief. He often found himself feeling sorry for Joyce regarding all the loss she was experiencing (which he could relate to as he still grieved his grandmother); first by losing her husband, then being diagnosed with Alzheimer's disease, and having to face these challenges without adequate support from her children. Ben remained understanding and never became annoyed with Joyce when she started seeking him out more frequently. Although he now had less time for her due to his having to shift priorities and attend to his new and more acutely ill patients, he still tried to support her by being responsive when he could. However, over the course of several weeks, Ben's supervisor assigned him more responsibility and increased his caseload, feeling that Ben could manage the extra experience based on his excellent performance. It was during this time that Ben noticed a dramatic shift in Joyce's presentation toward him. During his now briefer and less frequent encounters with Joyce, she would often start to emotionally escalate, become angry, and blaming regarding her perception of his lack of time for her, and would start accusing him of abandoning her, just like her children have. Now Ben is starting to avoid Joyce as much as possible and he is finding her behavior toward him to be quite emotionally overwhelming. He has noticed that his empathy toward her has decreased significantly and he is now perceiving her as unreasonably demanding and he often feels irritable and manipulated after their encounters. This has started to affect his interactions with his other patients, and he is noticing he is generally more irritable, not as engaged in his clinical interactions, and coming across as more impersonal and less sensitive than what is

typical for him. His supervisor, noting these changes, eventually points it out to him and expresses concern.

## Case Analysis

The case vignette of Ben illustrates the emotional and psychological reactions typically experienced by individuals who are experiencing *encounter stress*, which is the stress individuals can experience when they are working in roles that require extensive personal interactions with others. Resident physicians, practicing physicians, and other healthcare professionals often experience high rates of encounter stress because they regularly interact with patients who are unwell or facing acute life-threatening illness that can contribute to the expression of significant distress and the manifestation of unpredictable and challenging behaviors in the clinical setting. Feeling overwhelmed or emotionally drained from routine encounters with challenging patients is part of the emotional and psychological sequelae resulting from the contact overload often associated with encounter stress.

Ben expresses appreciation for his supervisor's concern and, with his support, recognizes that his increased irritability, reduced empathy toward patients, and avoidance of Joyce are signals that he has reached his emotional limit. This prompts him to appraise the state of his current work-life balance and he realizes that he has been taking on more work than he can manage and is not asking for help. This has left little time for the self-care activities that are usually part of his routine that help him stay balanced. Over the last several weeks, Ben has had no time to exercise and declined several social outings with fellow residents due to his lack of time. He realizes that being stressed for time and his failure to engage in self-care have led to feeling emotionally exhausted and physically depleted, and contributed to a negative mindset regarding his appraisal of Joyce. Behavior that Ben previously perceived as reasonable in the context of grief and dementia is now interpreted as manipulative and irritating. With some self-reflection, Ben can see how his dismissiveness has likely triggered Joyce's anger and escalated her requests for his time. Ben also considers how his avoidance and unavailability might be confusing for her in context of her cognitive impair-

ments related to Alzheimer's disease. Here Ben's assessment of how *his* behavior and emotions are perceived by and affecting Joyce allows him to consider ways he can adapt to, rather than dismiss the situation with Joyce. Ben also considers the possibility that the extra time he initially provided to Joyce was driven by sympathy regarding the loss of her husband (which triggered his own grief related to his grandmother) so that he became more personally involved than he should have been. Ben eventually stopped avoiding Joyce and instead of approaching their interactions with dismissiveness and irritation, resumed an empathic approach by demonstrating understanding and normalizing her grief and pain. Ben also recommended that the unit psychologist provide grief counseling to Joyce which reduced the need for Joyce to seek out Ben and provided her with the extra support that she needed. The strategies that Ben employed to help him manage his encounter stress constructively are summarized in Table 7.8.

**Table 7.8** Strategies to manage encounter stress

| Consider | Rationale |
|---|---|
| Recognize your limits | The signals that indicate when a person has reached their limit are different for everyone. Common ones to monitor include withdrawing either psychologically or physically from others, becoming irritable, impersonal, cold, or emotionally sensitive. Monitor for these so you can implement self-care to manage or avoid this |
| Appraise emotional experience | By becoming more aware of recognizing emotions, understanding what they are signaling, regulating their expression, and how they affect the people around you can help you manage relationships more effectively in the healthcare setting |
| Cultivate empathy, not sympathy | Understanding the difference between empathy and sympathy can help structure communication to address a person's feelings, wants, and needs. When you are sympathetic with the other person, you can become engulfed in their situation. Empathy on the other hand enables you to understand their situation, but not become involved in it |

## Summary: Building Self-Awareness Is the Key in Appraising How Much Stress Is in Your Life

**Skill-Building Exercise: Pause and Reflect**

The four common types of stress encountered in the workplace initially defined almost 20 years ago [16] continue to be relevant in modern workplace and medical training settings. Take the time to review your individual situation and identify whether any of these types of stress are present in your resident training environment. Once identified, review the different strategies presented in this chapter that can be implemented to help manage the particular type of work stress you have identified.

- Time stress: not having enough time to complete work or manage obligations
- Anticipatory stress: anticipating something uncertain in the future
- Situational stress: encountering and having to manage an unanticipated situation
- Encounter stress: related to interacting with a certain person or group of people

**Key Takeaways**

- This chapter has reviewed the common types of stress that are often encountered in occupational including medical settings that can be detrimental to physical and mental health well-being.
- Resident physicians are encouraged to increase their awareness of their individual circumstances since unmanaged stress is known to contribute to physician

burnout, decrease work-satisfaction and performance, and reduce overall resilience to successfully manage work-life demands. This underscores the importance of residents learning how to effectively identify stress in their workplace, gain insight into the possible root cause of their stress, and recognize its manifestations at the individual physical and psychological level. This awareness is imperative in establishing what adaptive skills and strategies reviewed in this chapter might be most applicable for each individual situation to start addressing and managing the frequent stress residents can expect to and do encounter in medical training settings.

- Residents are encouraged to do regular self-appraisals to determine their level of subjective stress. Tools to aid in this self-appraisal are provided in Table 7.9 in the additional resources section of this chapter.

**Table 7.9** Selected resources about stress awareness and management

| Resources | Description |
|---|---|
| Test-Stress.com<br>The Maslach Burnout Inventory (MBI)<br>https://www.test-stress.com/en/free-burnout-test.php | A free test to assess your level of stress and burnout |
| Depression Anxiety Stress Scale [19]<br>https://openpsychometrics.org/tests/DASS/ | Interactive version of this tool can be accessed for educational purposes |
| Greater Good Science Centre at UC Berkeley<br>https://greatergood.berkeley.edu/quizzes/take_quiz/stress_and_anxiety | Free stress and anxiety quiz adapted from the DASS |

## Additional Resources

Selected resources about stress awareness and management in medical settings are illustrated in Table 7.9.

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# 8

# Causes of Chronic Stress and Impact on Physician Health

Amanda Ritsma and Lauren Forrest

## Introduction

Stress is known to be a challenge that activates the sympathetic nervous system and fight-or-flight response, with additional impact on the immune system, metabolic hormones, and molecular processes [1]. Stress can be classified based on the timeline of the experience (i.e., acute vs. chronic stress) and also based on the potential impact of the stress (i.e., good stress vs. tolerable stress vs. toxic stress) [1]. Activation of the stress response has the potential to be protective/adaptive or to be maladaptive, leading to pathophysiologic changes. The aim of this chapter is to explore the differences between acute stress and chronic stress and to examine the factors that contribute to chronic stress, along with its negative impact.

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## Definition of Stress

Stress awareness and stress response are discussed elsewhere in this volume and the reader is directed to that section for a more detailed discussion (see Chap. 7, *Stress Awareness and Management in Medical Settings*). Although people use the term "stress" daily, the meaning of the term can be highly variable. Stress can be used to describe positive, negative, and neutral experiences and can be both helpful and detrimental. Stress can be a motivator for people. It can help them rise to the task in front of them and drive their internal motivation. On the other hand, it can lead to maladaptive coping and debilitating distress that impair an individual's ability to function or effectively deal with the stressor and the stress [1].

The experience of stress is mediated by the autonomic nervous system which is divided into two branches: the sympathetic and parasympathetic nervous system [2]. These systems act to ensure the individual's response matches that of the surrounding environment. Stress is an inherent part of the physician role; physicians are required to make decisions and perform skills countless times daily under the pressure of limited time, decisions that impact the quality of patients' lives and influence morbidity and mortality. Stress activates the sympathetic nervous system; heart rate and blood pressure increase to put one into action mode. This is the acute stress response and how stress is typically defined. Normally humans can respond in time to bring down the acute surges in their stress hormone levels. Consider, however, what happens when acute stressors continue and become chronic in nature. Chronic stress is dangerous; because of its insidious nature, people do not always notice when their acute stress transforms into a perpetual state of sympathetic arousal. Chronic stress with its accompanying impact on body, mind, and behavior slowly depletes one's emotional and physical resources, sometimes without notice [3–6].

## Homeostasis and Allostasis

The human body responds to acute stressors with what is needed to optimize performance in the moment of the stressful situation. The eventual goal is to gradually return the body to its baseline state of

nervous system and hormonal functioning once the acute threat and need for enhanced arousal has passed. For many years, homeostasis was the term used to describe that baseline. Homeostasis, which is "the ongoing maintenance and defense of vital physiological variables such as blood pressure and blood sugar," was defined by Walter Cannon in 1929, and is generally regarded as being responsible for maintaining baseline stability in our body [7]. Our understanding of the physiologic response to stress has evolved to include the concept of allostasis which postulates that rather than simply attempting a constant equilibrium, the body must change continually in the face of changes to the environment or external stressors to achieve stability. This term was coined by Sterling and Eyer in 1988 to reflect the process whereby organisms have the ability to change their homeostatic parameters to adapt to new or changing environments [7]. When allostatic systems are chronically overused, however, this can lead to pathophysiologic changes in the body and mind.

McEwen provides an example of how this works in the immune system [1]. When an acute stressor activates an immune response through mediation by catecholamines and glucocorticoids, this is positive and adaptive as it protects the organism from an infection. However, when there is chronic exposure to the same stressor and therefore the same stress-mediated chemicals, one sees the opposite effect, which results in immune suppression [1]. An acute immune response is helpful in that moment; however, if recovery from the acute event is not accompanied by returning to the appropriate baseline homeostasis to terminate the acute response from the various stress mediators, this is added to the "allostatic load" [1].

When an individual is repeatedly challenged to maintain and/or adapt, leading the allostatic system to remain active, the mediators of allostasis cause deleterious effects in the body, including receptor desensitization and tissue damage, which is called the "allostatic load" [8]. It is easy to imagine how medical residency lends itself to an increased allostatic load. Between call shifts, clinics, research projects, plus efforts to maintain a life outside of work, acute stressors are plentiful, with sometimes few perceived restorative windows to support return to baseline. This can be worrisome, as a chronically increased allostatic load has been found to increase the accumulation of abdominal fat, the loss of bone minerals, and the atrophy of nerve cells in the hippocampus [9].

**Key Definitions**

- *Allostasis:* The state when mediators of the stress response are activated to achieve stability in the face of a stressor [1].
- *Allostatic load/overload:* The cumulative effect of activation of body systems involved in the stress response cycle, which are chronic and lead to maladaptive changes [1].

## Acute and Chronic Stress

The concept of the stress response was first written about in the 1930s by Hans Selye and was initially referred to as "general adaptation syndrome" (GAS) [10]. The three phases of GAS are: (i) the alarm phase, (ii) the resistance phase, and (iii) the exhaustion phase. The alarm phase refers to the identification of a stressor or threat and the mounting of an appropriate alarm response, and most corresponds with acute stress [11, 12]. Chronic stress can be thought of in terms of the other two phases of GAS – the resistance phase, when the body tries to adapt to the stressor or threat, and the exhaustion phase, when the resources are depleted and the body cannot maintain its regular functions [6, 7]. This is depicted in Fig. 8.1.

Stress, both acute and chronic, can be thought of as good, tolerable, or toxic [1]. The alarm response is triggered once an individual faced with a stressor appraises the situation (both the demands of the environment, and their personal resources) [11]. If one believes that the resources are adequate to meet the demands of a particular stressor, then the response can be positive, thought of as facing a challenge [1, 6]. A stressor could be considered tolerable if the stress is challenging, and perhaps a bit beyond one's own resources, but ultimately the person is able to rely on

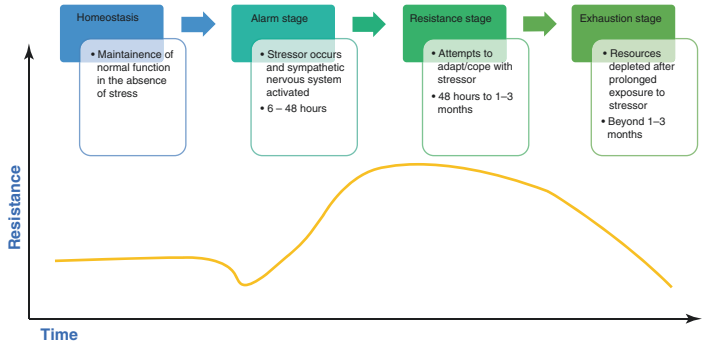


**Fig. 8.1** Diagram of Hans Selye's description of the general adaptation syndrome illustrates the progression from acute to chronic stress. (Adapted from [10–12])

adaptive coping strategies and the support of others to manage the stress [1]. Stress would be considered toxic when the demands of the environment are assessed to be vastly greater than the individual's resources, and the individual experiences distress [1, 6].

The Yerkes-Dodson law helps one to conceptualize the variability of the experience of stress and the resulting stress response [13]. This law states that stress is helpful to drive motivation and performance for difficult tasks, but only up to a certain point. Minimal "stress" can limit interest in or attention to a task. Conversely excessive hyperarousal, stress, or anxiety can lead to performance impairment and even breakdown for more complex tasks [13]. This is depicted in Fig. 8.2.

## Factors Contributing to Chronic Stress

Chronic stress in health professionals can be affected by several different factors: personal, professional, and organizational. This section discusses some of these factors in detail, particularly those that are common and well established in contributing to chronic stress and, possibly, burnout.

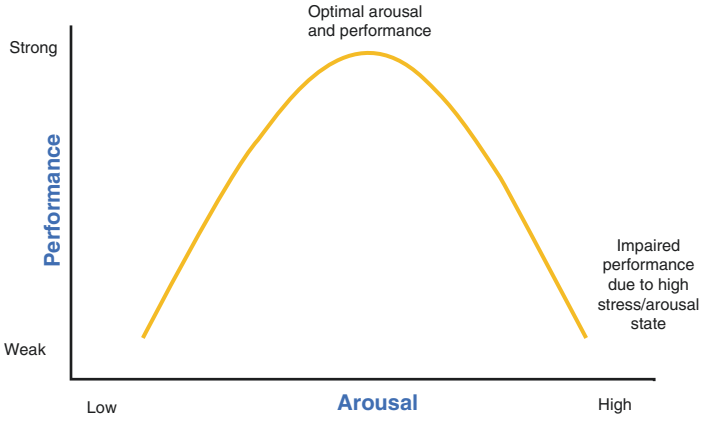


**Fig. 8.2** Hebbian version of the Yerkes-Dodson law that depicts the relationship between arousal state (stress) and performance on a difficult task [13]

## Personal Factors

### Gender

Research has found that in general female physicians experience higher degrees of chronic stress compared to male physicians [14]. Additionally, female physicians have been found to have a lower sense of control in their work environment which may be a key contributor to the higher levels of stress. Important to note is that male physicians still show higher levels of stress in comparison to the general population, suggesting factors inherent to working in medicine as possible contributors to the development of chronic stress [14]. Other factors that have been hypothesized to lead to gender differences in reported levels of chronic stress include biological differences, cultural socialization, and the challenges of work-family integration, with family responsibilities still often falling disproportionately to those who identify as female [14–16].

Research has not specifically addressed stress related to discrimination in the healthcare workplace; discrimination can be a contributor to chronic stress and impact people based on gender, sexual orientation, race, religion, and social status. It is important to note that all these important factors contribute to one's degree of stress and sense of well-being.

### Adverse Childhood Experiences

Early life experiences impact the development of brain structures and epigenetic mechanisms that lead to structural differences in how the brain responds to stress and stress hormones. These experiences influence impulse control, judgment, self-esteem, and self-regulation, and therefore impact one's experience of and ability to cope with stress [17].

Early childhood experiences can influence whether one's response to stress is adaptive (good), neutral (tolerable), or maladaptive (toxic). Individuals with increased adverse childhood experiences may have more limited social supports and increased brain vulnerability that can combine to reduce capacity to appraise stress as good or tolerable [1].

### Personality Traits

Individual personality traits can also affect how an individual experiences stress. Perfectionism is a common personality trait among physicians and has been defined as the refusal to accept any standard that is less than perfect and results in endless striving for a performance that is without fault or mistakes and at a high level of competency [18]. Perfectionism has been associated with greater levels of psychological distress among students of health professions [19].

In order to gain acceptance into medical school, there is an impressive degree of achievement required. Often, an individual with perfectionistic tendencies will set high standards for themselves and subsequently work to achieve these standards (or experience significant stress/distress if these standards are not met). Once in medical training, the endless amount of material to learn, constant evaluation by supervisors, and self-comparison against the achievements and performance of others can lead to feelings of incompetency/inadequacy, perceived failure, and imposter syndrome. As training progresses into clinical work (i.e., clerkship, residency), pressures mount as the trainee becomes responsible for decisions that can significantly impact the lives of others. This reinforces the drive to perform at a "perfect" standard without mistakes or faults [4, 11]. Perfectionism has been linked with an

increased risk of depression, anxiety, obsessive-compulsive symptoms, and suicide [20].

Glen Gabbard describes the role of compulsiveness in physicians as a quality that is perhaps adaptive in the physician role, but also as contributing to maladaptive behaviors that deplete wellness [14]. He described the compulsive triad as feelings of doubt, guilt, and an exaggerated sense of responsibility, cultivated by a career where diagnostic uncertainty is at times a reality, where complexity abounds and where human suffering and life are at stake, but this compulsive triad ultimately demands a high personal cost. It manifests in the inability to relax, reluctance to take vacation, problems with prioritizing time for family, and an excessive sense of responsibility for things that are beyond one's control [21]. Feelings of excessive guilt can lead to the sense that one is being selfish in the pursuit of pleasure or healthy self-interest is common and detrimental to the well-being of physicians [21].

**Did You Know?**

*Imposter syndrome is defined as chronic questioning of one's abilities and a fear that one will be "discovered" as a fraud or "imposter"* [19].

## Personal Coping Styles

Personal coping style also has an impact on an individual's ability to deal with stress and can be categorized as one of two types: approach and avoidance. Approach coping strategies attempt to face and deal with the stressor and related emotions, while avoidance coping strategies attempt to escape or avoid the stressor and related emotions [22].

In general, approach coping strategies tend to be more effective in reducing stress and result in improved physical and mental health outcomes [22]. Avoidance coping strategies tend to predict development of anxiety, depression, disruptive behavior, fewer positive emotions, and worse physical health [22, 23].

Selection of appropriate and adaptive coping strategies is important in dealing with the numerous daily stressors encountered during medical training and practice. Some commonly used adaptive coping strategies include active problem solving, planning, logical analysis, positive reframing/reappraisal, using emotional support, and self-regulation or controlled expression of emotion [24, 25].

**Skill-Building Exercise: Pause and Reflect**

As a reflective exercise, consider answering the following questions:

1. What personal factors may predispose you to vulnerability to the effects of stress?
2. What are some of your protective factors?
3. Are there protective factors that you would like to adopt or develop further?

## Professional Factors

### Medical Practice Pattern

Occupational factors constitute an important contributor to the rising levels of stress and burnout among physicians. Globally, it is common for health systems to face increasing bureaucracy, volume, complexity of patient needs, excessive workload, workforce shortages, and reduction in resources [26]. These are systems-level issues, and they will be expanded upon further in subsequent chapters (see Chap. 16, *Steps Towards Building a Culture of Humanistic Teaching and Medical Practice*, and Chap. 17, *Pushing Back: Recognizing the Need to Advocate for Systemic Change in A Sustainable Medical Field*).

Practice characteristics such as long work hours, high emotion work, practice culture, and work role can all play an important

role in contributing to physicians' experience of stress [14, 26]. As work hours increase, reports of chronic stress can increase [14]. Listening and responding to psychosocial aspects of patients' lives is emotionally demanding work that can lead to increased levels of stress. Considering time and other resource constraints that limit what physicians are able to accomplish on behalf of their patients, it is no wonder that work in healthcare can sometimes lead to feelings of helplessness and loss of control.

The culture of a physician's practice environment also impacts levels of stress and sense of well-being. Physicians have identified that challenges in relationships with other physicians and staff members in the practice can lead to significant distress [26]. Experiences of being bullied by colleagues and feeling isolated and unsupported are also often reported as significant determinants of workplace stress [26]. The current culture of medicine unfortunately does not reliably provide emotional safety for vulnerability to be shared, trust to be established, and support to be offered between colleagues; instead, individualism and isolation may appear to be promoted [8].

### Patient Characteristics

Research has shown that caring for patients who are experiencing a high degree of suffering or trauma or who have more complex healthcare needs places increased demands on the physician supporting them [26–30]. Despite this, it is often the interactions with and care for patients in such circumstances that are described as some of the most satisfying aspects of the work engaged in by physicians [26].

There are also times in one's medical practice when physicians are required to deal with difficult or confrontational patient situations, which can have a significant impact on the clinician's sense of self as well as a sense of safety and security at work [26]. This reinforces the need for a supportive and safe practice culture as a protective mechanism, as physicians often have little control over these types of events when they happen and could benefit from being able to debrief and process these situations in a supportive team environment [26, 28].

## Organizational Factors

### Occupational Factors

Some of the demands intrinsic to a physician's work can be a source of stress, including dealing with patient complaints, managing finances on reduced healthcare budgets, and fearing repercussions when medical mistakes are made [26]. Other demands reported in the literature that are adding to physician workload include increased documentation requirements, participation in quality improvement initiatives or appraisals of their work, and the expectation to care for higher numbers of patients without additional resources [26].

Residents may experience higher levels of demand, less control, and less social support in the workplace than supervising faculty physicians [31]. These factors are associated with an increased experience of work-related distress [31].

## Impact of Stress on Health

Chronic levels of stress can impact one's physiology, emotions, and health-related behaviors. States of chronic stress can lead to symptoms of anxiety or depression, poor sleep, impaired nutrition, or other maladaptive strategies such as use of alcohol and/or other drugs to cope [1]. Chronic stress can also lead to reduced levels of social engagement, engagement in work, and physical activity. Over time, such behaviors can lead to worsening of one's emotional state and body composition (e.g., weight gain) and can make it even more difficult to engage in health promoting versus health damaging behaviors [1].

The following sections examine the impact of stress on one's physiology, emotions, and behavior in greater detail. Strategies to combat the impact of chronic stress on these aspects of physician health and wellness are covered elsewhere in later chapters of this book.

## Chronic Stress and the Body

### Neural Changes

Research has shown that chronic stress leads to structural changes of the brain [1, 17]. Structural changes in the prefrontal cortex can lead to impairments in attention set shifting which has potential impact on cognitive performance at work when one is constantly expected to be able to shift attention between competing demands (e.g., tasks, patient care, education, teaching) [17]. There are also structural changes in the amygdala which can lead to enhanced fear and increased aggression in animal models [17, 32].

The hippocampus is also impacted by acute and chronic stress in both structure and function [17]. Stress can suppress growth and survival of neurons in this brain region which can have a functional impact as well; the hippocampus is a critical brain region involved in learning and memory. Some changes that occur in this brain region with acute or chronic stress are reversible and may in fact be adaptive and protect the brain from permanent changes related to an excess of excitatory neurotransmitters [17].

### Cardiovascular Changes

It is well established that cardiovascular disease is multifactorial in its etiology and that factors including sex, smoking, diabetes mellitus, aging, and genetics can lead to atherosclerotic disease [33]. Emerging evidence is seeking to adjust these traditional risk factors for cardiovascular diseases, to include psychological stress as an independent risk factor, specifically for atherosclerosis. It is well understood, as noted above, that stress activates the sympathetic nervous system as well as the hypothalamic-pituitary-adrenal (HPA) and sympathetic-adrenal-medullary (SAM) axes that play a role in the pathogenic process [33]. When these systems are activated along with the various stress hormones, this leads to an increase in cardiovascular activity in which endothelium is damaged, thus precipitating an increase in adhesion of immune/inflammatory cells to the arterial wall and promoting an inflammatory response that leads to the creation of stable or unstable plaques [33]. This endothelial damage initiates a down-

stream cascade of immune-mediated responses which support a cycle of inflammation. In all, heightened cardiovascular reactivity in response to stress or depression has been shown to lead to progression of atherosclerosis, essential hypertension, and plaque instability, which can result in an increase in acute coronary syndrome [33, 34].

### Autonomic Changes

It is well known that the experience of stress is mediated by the autonomic nervous system, which is managed by the hypothalamus [2]. The autonomic nervous system is divided into two branches: the sympathetic and parasympathetic nervous system which together act to maintain homeostasis in the body. The various organs of the body are innervated by branches of both systems as they serve to offset each other. The parasympathetic nervous system plays a more dominant role when one is at rest – it slows the heart rate and aids in digestion and sexual activity [2]. Its general role is to conserve energy. In contrast, the sympathetic nervous system is activated when one is acutely stressed, and it initiates the "fight-or-flight" response [2]. It works by increasing blood flow towards organs that are necessary for an intense physical response (e.g., heart, lungs, skeletal muscle). It causes an increase in heart rate, respiration, and blood pressure, necessary for enhanced function in the face of danger. It antagonizes the function of the parasympathetic nervous system and moves energy away from processes such as digestion and sexual function, as these are not necessary in times of acute danger [2].

### Immune Changes

The connection between stress and immune-related health concerns is not new. It is well documented that the presence of chronic stress is associated with chronic low-grade inflammation, likely from the elevated presence of interleukin-6 and C-reactive protein [33]. Studies have demonstrated associations between chronic stress and increased susceptibility to the common cold, reduced antibody response to vaccination, delayed wound healing,

increased morbidity and mortality from infectious disease in general, autoimmune disorders, neoplastic diseases, diabetes mellitus, and cardiovascular disorders, likely through its effects on inflammation [2]. Acute stress activates an acquired immune response through catecholamines, glucocorticoids, and other immune mediators; however, chronic exposure to the same stressor over weeks gradually leads to immune suppression [1]. Chronic stress also has an effect on behavior, leading to dysphoria, anhedonia, fatigue, social withdrawal, hyperalgesia, anorexia, altered sleep-wake patterns, and cognitive dysfunction [2]. Chronic stress has also been implicated in playing a role in major depressive disorder through activation of inflammatory pathways [2].

### Metabolic Changes

Stress impacts many of the body's metabolic processes. Stress can affect overall water volume and lead to dehydration [35]. Real threats to water homeostasis and perceived threats from psychogenic stress both activate the renin-angiotensin-aldosterone system, and this activation can be exaggerated by the actions of cortisol. During times of stress, water tends to shift from the intracellular space to the extracellular space to maintain blood pressure and plasma volume. Psychological stress leads to dehydration for the average human [35]. Stress can also play a role in obesity: chronically stressful situations cause attraction and activation of stromal fat immune cells and can promote insulin resistance [35]. Further, hyperactivation of the HPA axis affects adipose tissue causing changes in eating behavior, such as loss of control of eating [35]. Stress has also been found to influence bone health by preventing bone remodeling which then affects bone density [35].

## Affect

Stress causes structural changes in areas of the brain that are involved with cognition, decision making, anxiety, and mood, which in turn can impact one's behavior. Much is known about the

impact of stress on brain regions such as the prefrontal cortex, amygdala, and hippocampus [17]. Initially, in the case of acute stress, this response can be helpful and adaptive; however, when prolonged (as in response to chronic stress), it can lead to maladaptive changes to the neural circuitry and consequently to maladaptive emotional states and behavior [17].

High levels of stress in physicians have been linked to the development of burnout, anxiety, depression, anger, cognitive impairment, and substance abuse [36–41]. Burnout is a work-related syndrome experienced in the face of high levels of stress that lead to feelings of exhaustion, cynicism, detachment, and a reduced sense of personal accomplishment [42]. It is highly prevalent among physicians [43, 44]. Burnout can have significant consequences for both the suffering physician and their patients; burnout and depression have been linked to increased medical errors [40, 45, 46]. It is also reported as a possible contributing factor to the high rates of suicide among physicians [47].

These highly distressing states negatively impact cognition and the ability to make decisions at work and contribute to increasingly maladaptive cognitive distortions that only perpetuate the high level of distress [4, 8]. Some common cognitive distortions include "all or nothing" thinking, filtering, mind reading, catastrophizing, and over-responsibility [8]. These cognitive distortions are further described in Table 8.1. (For further details on cognitive distortions, please refer to Chap. 9, *Cognitive and Mindfulness Conceptualization*.)

**Skill-building exercise: Pause and Reflect**

Based on Table 8.1, consider which cognitive distortions you recognize from your own thought patterns over the past week. (The healthy response to challenge these cognitive distortions is further discussed in Chap. 9, *Cognitive and Mindfulness Conceptualization.*)

**Table 8.1** Common cognitive distortions in physicians

| Cognitive distortion | Description |
|---|---|
| All-or-nothing thinking | The world is seen in only black or white, right or wrong. There is no room for uncertainty or shades of gray.<br>Example: *I did not remember to list all of the steps of this procedure; therefore, I am a terrible resident.* |
| Filtering | The tendency to focus on specific (usually negative) details and discount positive details about a situation.<br>Example: *My supervisor has only given me negative feedback about my performance (forgetting about any positive feedback or praise that was given).* |
| Mind reading | The tendency to believe that people are making harsh, negative judgments about you, in the absence of evidence.<br>Example: *All my co-residents think I'm stupid and don't deserve to be here.* |
| Catastrophizing | The tendency to always predict that the worst-case-scenario is inevitable.<br>Example: *If I don't finish my rounds on time then I will get into trouble and be kicked out of the program.* |
| Over-responsibility | The sense that one is in greater control of a situation than is realistic. This leads to a sense of blame when things don't turn out as expected and can lead to anger, frustration, guilt, and shame.<br>Example: *It is my fault that the patient died after a myocardial infarction even though he declined to undergo cardiac catheterization.* |

Adapted from [8]

## Social

The demands of working as a physician can have significant impact on the health of social and family relationships, especially when coupled with the impact of the role on stress levels and emotional well-being [48]. Physicians who are struggling under the stress may fall into a pattern of overwork, or escaping into work while also setting poor boundaries between work and home life [48]. This pattern can put strain on marriages, partnerships, and relationships with children [48, 49]. Some traits that contribute to

individuals' success as physicians can be distancing in a personal relationship (e.g., perfectionism, compulsiveness, need to be in control) [48].

Though there is conflicting data regarding the rates of divorce in physicians, relationship problems are notably a common concern among physicians seeking support for mental health problems [48]. Cultivating intimate relationships and connection is an integral part of being human and keeping well. Connection and support from loved ones can help with the challenges and stress faced in the work of physicians. Dr. Michael Myers, a psychiatrist who specializes in the health of physicians and medical trainees, suggests some strategies to create and maintain intimacy in relationships, as listed in Table 8.2 [48].

**Table 8.2** Strategies to create and maintain relationship intimacy [48]

| Strategy | Description |
|---|---|
| Create protected time for communication with your partner. | It is important to have time to communicate with your partner that is uninterrupted by distractions, tasks, and work. This quality time can help rebuild connection and intimacy in a relationship. This type of protected time is also important to carve out for friendships, children, and others that make up one's support network. |
| Read books on relationships and practice the suggested exercises with your partner. | There are numerous resources available offering information on rebuilding intimacy and enhancing communication in relationships. Agree on some things to try with your partner and commit to these for a month or two and then re-evaluate to see if it is helpful. |
| Consider a marital enrichment weekend. | There are programs that offer formal workshops designed to support marriage and intimate relationships. The act of committing the time and effort can send an important message to your partner about your level of engagement in your relationship. |
| If working on it alone is not enough, seek professional help. | Marital or couples therapy could be considered any time, and especially when some of the other strategies have not resolved the issues or have only helped a limited amount. Having a trained professional to help examine the problems and offer guidance and hope in the relationship can be very helpful. |

**Skill-building exercise: Pause and Reflect**

Consider an important intimate relationship in your life. Are there any of the following warning signs present that may signal relationship difficulties?

1. Do you feel bored or lonely with your partner?
2. Does your partner complain that you do not share enough of yourself?
3. Do you argue without resolving the issues?
4. Are arguments increasing in frequency or intensity?
5. Are you using other forms of showing distress in the relationship (e.g., withdrawing, using passive-aggressive communication or sarcasm)?
6. Do you try to avoid talking about your day at work or numb yourself with drugs or alcohol after work?
7. Is immersing yourself in work becoming preferable to spending time with your partner?
8. Has physical intimacy with your partner changed? (Adapted from [48].)

## Check Your Learning

### Case Study

Sarah is a second-year resident in family medicine. She has always wanted to be a physician and is excited to finish residency and return to her hometown to practice in the local clinic. She enjoyed her experience of medical school and was happy with her residency match. Second year has brought new challenges. She feels that her preceptors are providing her with more autonomy, which has its advantages in terms of starting to feel like she is ready for independent practice. There are also drawbacks due to increased responsibility and higher levels of stress. She is in her third month back at her regular clinic, and although feeling more comfortable, the

increased level of daily stress is starting to take its toll. She is finding it hard to balance this with preparing for her college licensing exam, meeting her on-call and academic requirements, all while managing the leadership responsibilities as chief resident.

Sarah has always been someone who has excelled and has always had high expectations for herself. Although she has always received positive feedback on performance during rotations, she cannot help but feel like this is more because she is kind rather than being attributable to her overall competence and achievements. She has a constant feeling that it is just a matter of time before someone figures out that she is an "intellectual fraud". To this end, she often finds it hard to relax – she is always on the go, struggling to find balance in her professional and personal life. This difficulty with balance can be further exacerbated by the limitations on her schedule. She finds that flexibility in her schedule is very much limited by her supervisor's availability.

Sarah has found that these past 3 months have taken a toll on her ability to take care of herself. She finds less time to exercise, though she used to love to run and did it frequently, which in the past helped her to relieve stress and find balance. She is also finding it harder to make time to see her family, and her mother is constantly reminding her about this. She even felt guilty taking time off work when she was ill with a bad cold. She struggles to put healthy meals together and has found herself gaining weight. She finds herself feeling quite stressed at night, and it is difficult to turn her mind off enough to be able to fall asleep. Upon reflection, she wonders how so much has changed in what feels like such a short period of time.

***Question 1.*** **What factor likely does not play a role in Sarah's experience of chronic stress?**

A. **Gender**
B. **Personality structure**
C. **Chosen profession**
D. **Past psychiatric history**

**Answer: D ✓**

*Female gender identity, perfectionistic personality structure, and being a physician all make Sarah more likely to experience chronic stress. While adverse childhood experiences may impair someone's ability to successfully cope with stress, a past history of a psychiatric illness does not automatically confer this risk. Active depression or an anxiety disorder may affect someone's ability to respond adaptively to stress.*

***Question 2.*** **What phenomenon is Sarah experiencing when she is feeling like an intellectual fraud?**

A. **Normal resident reaction**
B. **Imposter syndrome**
C. **Anxiety disorder**
D. **Major depressive disorder**

**Answer: B ✓**
*Imposter syndrome refers to the commonly experienced phenomena among medical trainees in which the trainee feels like a fraud, that their skills do not match their peers, and that they do not deserve to be in medical training.*

***Question 3.*** **Which of the following coping strategies would be least likely to help Sarah successfully manage her stress levels?**

A. **Talk to a supportive friend or colleague**
B. **Start drinking alcohol nightly to help her fall asleep**
C. **Develop some positive self-talk phrases to remind herself she is doing a good job**
D. **Speak to someone in the resident affairs office about potential strategies for addressing the challenges she is facing**

**Answer: B ✓**
*Drinking alcohol or using other substances to numb or avoid negative emotions associated with stress is less likely to be helpful. The remainder of the choices are problem focused coping strategies that can be helpful in dealing with stress.*

***Question 4.*** **Which of the following would be a good strategy that Sarah could consider adopting in her own practice in order to reduce overall chronic stress levels?**

A. **Ensure she is working in a practice alone so she can make her own decisions and avoid having colleagues judge her work negatively**
B. **Reduce the time she spends with patients**
C. **Work more hours to ensure she is getting everything done in order to avoid a patient complaint or lawsuit**
D. **Continue to reach out to mentors and colleagues for support in dealing with challenges faced in work**

**Answer: D ✓**

*Option A is false because a supportive work culture can be protective against stress* [26]. *Even if someone decides to go into private practice, it is helpful to have a supportive professional network. Option B is false because although difficult patient encounters, patient complaints, and lawsuits can all be sources of stress; it is also often stated to be the most rewarding part of a physician's work, and care should be taken to determine what type of practice best fits with Sarah's values and brings a sense of purpose and meaning to her work* [26]. *Option C is false as well as longer work hours have been shown to have an impact on subjective experiences of stress in physicians* [14]. *Option D is correct because a strong support network can help to overcome stress.*

**Key Takeaways**

- The body's stress response is activated in the face of a perceived challenge or threat, by stimulation of the sympathetic nervous system and "fight-or-flight" response.
- Allostasis is a process in which the body's physiological mechanisms are continually adapting to optimize function in response to the environmental changes and stresses.

- When the stress response remains active for too long, as in chronic stress, there are negative impacts on physical and mental health.
- Chronic stress is prevalent among physicians and can have a variety of negative consequences for physician health and well-being. There are negative and lasting impacts on the brain, cardiovascular system, body composition, immune system, and mental health.
- A variety of factors contribute to the development of and experience of stress. There are personal factors, including one's own past experiences, personality traits, and coping style, practice factors, including the practice culture and patient characteristics, as well as systemic and organizational factors at play. It is important to be able to recognize the risk and protective factors for stress in physicians to target interventions aimed at reducing risk factors and strengthening protective factors. This will help the health of physicians and the patients they care for.
- Perfectionism and compulsiveness are personality traits that are prevalent among physicians and to some degree, important to succeed in the profession. Paradoxically, these same traits also make one more vulnerable to the negative impacts of chronic stress.
- Practice characteristics such as a complex patient population, high workload, sense of over-responsibility, and lack of community also contribute to development of chronic work-related stress.
- Chronic stress can negatively impact on relationships, and problems in relationships can also contribute to an overall heightened experience of stress.

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# 9 Cognitive and Mindfulness Conceptualization

Jelena P. King, Elena Ballantyne, and Heather E. McNeely

## The Cognitive Model

Aaron Beck is recognized as the first to propose a strong link between thoughts, emotions/feelings, and behavior in his work with depressed individuals [1]. His cognitive triad model highlights how thinking style (beliefs, perceptions, or interpretations) can have direct and powerful influence on emotion and behavior. Figure 9.1 illustrates this concept at its most basic level with thoughts directly influencing emotions and behavior. In actuality, the model is more complex whereby emotions and behavior can reciprocally influence thoughts and behavior and vice versa.

In this regard, the reciprocal and bidirectional relationships among thoughts, emotions, and behavior are likely better captured within a five-part model, which also considers the additional

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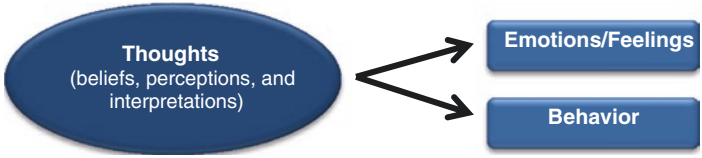


**Fig. 9.1** The cognitive triad model

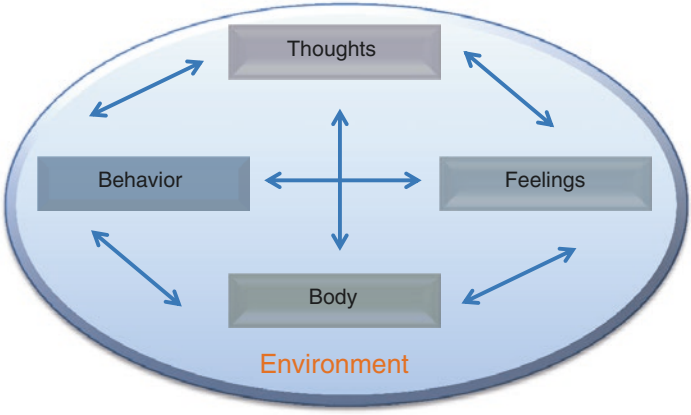


**Fig. 9.2** The five-part model

contribution that physical/physiological responses can have on thoughts, emotions, and behavior when situations are encountered in our environment [2]. The five-part model is illustrated in Fig. 9.2.

Consider the frequently encountered and often stress-inducing scenario in medical training when receiving performance appraisal and constructive feedback from a supervisor. The reactions experienced by residents in this situation will vary considerably depending on the individual circumstances and can include any combination of feelings/emotions, thoughts (appraisal/interpretation of the situation), physical/physiological responses, and behavior that interact and ultimately determine whether the experience will be perceived as positive or negative (Table 9.1).

**Table 9.1** Sample reactions and corresponding thoughts in a performance appraisal situation

| Reaction | Positive | Negative |
|---|---|---|
| Feelings | Enthusiastic<br>Confident | Concerned/anxious<br>Defensive |
| Thoughts | "I am competent"<br>"I am proud of my work" | "I am incompetent"<br>"I probably made a mistake" |
| Behavior | Affiliative/friendly<br>Confirm meeting | Disengaged/hostile<br>Cancel supervision |
| Body (physical) | Calm<br>At ease | Sweating<br>Heart racing |

**Skill-Building Exercise: Identify Your Reactions**

*Receiving performance appraisal and constructive feedback from a supervisor:*

- Take a moment to identify what your typical reactions might be in this scenario, taking pause to reflect on what shows up for you automatically – is it a feeling, thought, behavior, physical sensation, or a combination of these?
- Think about potential cause and effect relationships among these reactions to increase your understanding of how they combine to influence the assumptions and expectations that you bring to a supervisory performance appraisal situation and the interpretations you might make in these situations that could lead to either positive growth experiences or negative self-evaluation and/or criticism.

## What Are Thoughts?

Comparing a group of individual resident responses with respect to thought reactions in *the same* performance appraisal situation would likely reveal very different thoughts about the same

scenario. Sometimes *one* can be in the *same situation* but have different thoughts about it at different times. Thoughts and beliefs are typically shaped by past experiences that contribute to the development of expectations and assumptions about how the world works and what can be expected from others. Essentially this renders thoughts as merely subjective narratives and personal interpretations that allow individuals to make sense of and understand their world and experiences. As previously highlighted in the cognitive triad model, this is how thoughts can exert a powerful influence on subsequent experiences, by eliciting emotional reactions that also directly affect behavior. The subjective nature of thoughts means that they are not facts, but often these thoughts are so powerful that they influence behavior and emotional reactions and how one lives life, as if they were definitive facts. If these thoughts are negative (as they often can be when one is under stress), they can bias one's viewpoints and lead to distorted interpretations that over time can *decrease resilience and increase vulnerability* to stress. This is especially true when self-care is reduced as a consequence of the time-stress associated with high physical and emotional demands of residency.

## Different Levels of Thought

Picture an ocean and various objects that differ in buoyancy that are floating in the ocean. Now consider that the ocean represents the mind and that the various floating objects are thoughts (Fig. 9.3). Automatic thoughts are those objects that are very buoyant and shoot up to the surface immediately and remain there. Intermediate thoughts are heavier and remain partially submerged. Core beliefs are represented by the heaviest objects that become embedded in the ocean floor permanently and remain relatively stationary.

***Automatic thoughts*** These are those immediate, first, and quick thoughts that come to mind in response to a situation and that directly affect emotional response and behavior. They can be considered "surface-level, non-volitional, stream-of-conscious-

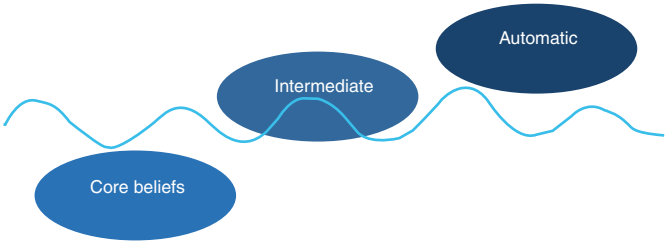


**Fig. 9.3** Different levels of thought

ness cognitions" that "can appear in the form of descriptions, inferences, or situation-specific evaluations" [3]. Because they are automatic, these thoughts are often reflexive reactions based on the beliefs people hold about themselves and the world and can often go unnoticed and unquestioned, which can actually serve to strengthen them. Research shows that higher levels of positive automatic thoughts are correlated with higher levels of happiness and that individuals with frequent positive automatic thoughts are more likely to respond to stress by feeling that their lives are more meaningful compared to those with infrequent positive automatic thoughts [4, 5]. According to the cognitive model, the content of automatic thoughts is often related to deeper-seated intermediate thoughts and core beliefs, which are also thoughts but formed early in development based on experiences that shape personal narratives regarding self-worth.

***Intermediate thoughts/beliefs*** These are the assumptions, attitudes, and rules that individuals develop to try and make sense of their experiences and are maintained/utilized in most situations. They often manifest in the rules and guidelines that guide one's behavior and inadvertently bias attention and priorities toward information in the environment that is congruent with these assumptions and attitudes, and away from information that is not. If automatic thoughts are negatively biased, then they are likely being driven by negative beliefs and assumptions that in turn have been developed and maintained by a more rigid and fundamental level of belief, referred to as *core beliefs*, which are further detailed below.

**Table 9.2** Sample statements capturing different levels of thoughts

| Automatic thoughts | Intermediate beliefs | Core beliefs |
|---|---|---|
| "This will end badly" | "I can't do anything right" | "I am stupid." |
| "I've got this!" | "I will succeed if I try" | "I am smart" |
| "She doesn't like me" | "Nobody will ever appreciate me" | "I am unlovable" |
| "I am in danger" | "I need to protect myself" | "The world is not safe" |
| "I don't trust him" | "People will hurt me if they have a chance" | "People are untrustworthy" |

***Core beliefs*** These are fundamental and deep-seated beliefs that are global, rigid, and overgeneralized [6]. These are often basic beliefs about the self that originate from early life experiences and attachments and are closely connected with self-esteem and self-acceptance. In essence, they are those absolute truths which form the core underlying and informing all of the surface (automatic and intermediate) thoughts. Because these beliefs are established early in life, they are typically accepted as truth without question, and inadvertently pull for behavior and responses from the environment that reinforce and strengthen them. When core beliefs are negative, rules created are often limiting, restricted, and based in fear [7]. Table 9.2 provides examples of different statements that represent these three different levels of thought.

**Did You Know?**

*Increasing awareness of one's emotions is a critical element in determining one's beliefs, expectations, and assumptions. In instances where one is not certain what these beliefs are, identifying and exploring the feeling(s) can help one reach the thoughts and specific beliefs behind the situation.*

## Psychological Flexibility

Psychological flexibility refers to the ability to adapt to fluctuating demands, shift and balance perspectives and consider alternative courses of action when faced with difficult situations. Being *psychologically flexible* builds resilience and confers greater mental and physical well-being during times of stress [8]. In order to be psychologically flexible when faced with unexpected circumstances, we need to have full awareness of the present moment. This requires us to take time to *stop* and notice what is happening and *what we are thinking* when we are experiencing strong emotions. In these instances, it can be helpful to give thoughts a label. One might think of it like sorting through mail – some may be notices requiring a response (e.g., bills), but many items may be just junk mail to be discarded (e.g., unhelpful thoughts or thinking traps).

It is important to recognize that some types of thoughts are helpful, some are unhelpful, and some can be both. For example, planning thoughts can be helpful to organize one's day. However, planning thoughts are unhelpful when trying to stay focused on what a patient or colleague is saying during a conversation. Other types of thoughts such as worries are almost always unhelpful, and often precipitate a deep spiral of negative thoughts. By giving thoughts a label, we can sort through them more quickly without getting "stuck" in them and then challenge or reframe them to be *more flexible and balanced*. It is important to remember that thoughts are not facts and that by labeling them, one creates separation or distance to more objectively determine whether they are helpful or not. This can then allow one to s*hift to more balanced thinking* with greater ease. For example, rather than thinking, "All I do is worry, I am such a worry wart", one could say, "Oh, worry thoughts are here." Labeling thoughts to create distance with no intention to change the thoughts is an example of a mindfulness-based strategy to help manage thinking. This will be reviewed in greater detail at the end of this chapter to provide a complementary approach to manage thinking that *cannot be changed*.

## Cognitive Distortions

Human minds are designed to think and at any given moment experience a multitude of thoughts to make sense of our environment, interact with others, and support goal-directed behavior [9, 10]. It is likely that there is a combination of both positive and negative thoughts present at any given moment, which is entirely normal and expected. As reviewed, this is important because the valence and nature of these thoughts will understandably have direct effects on emotional and behavioral responses. However, in many instances the thoughts experienced are so reflexive and automatic that they remain subconscious and go unnoticed until strong emotions are elicited. This is most often the case in situations where there is a subjective experience of strong emotion that is not congruent with the situation; something referred to as "emotional overreactions." As further illustrated in section "Defining Thinking Traps", it is likely that in these instances unhelpful thinking styles (referred to as "thinking traps," or patterns of thinking that correspond to deeper beliefs, assumptions, or expectations about self, others, and how certain situations *should* unfold) are being activated. As previously reviewed, these thoughts arise from previous experiences and interpersonal interactions (both negative and positive) and are continually shaped and modified throughout our lifetime. Certain repetitive cycles or patterns of thinking, feeling, and behaving can, over time, become fixed and inflexible and self-reinforcing core beliefs. Examples of fixed beliefs in residency might be:

> I should succeed at everything I put my mind to.
> Failure is a sign of weakness.
> If something goes wrong, it is because of incompetence.
> Mistakes are not acceptable.

If nothing goes wrong (e.g., no failure, no mistakes, success is achieved) the core beliefs listed above can become formed, maintained, and strengthened to become more permanent and fixed. Some of these beliefs might also motivate and drive an individual to attain further success and achieve set goals. Ultimately, life and

circumstances change, often bringing with them the necessity for adjustment to disappointment, loss, or adversity through unexpected events. In these instances, if thinking is rigid and inflexible, then managing the unexpected, challenging one's thinking, and responding with resilience becomes difficult. One can often become *stuck,* and when this happens stress amplifies, moves one further away from constructive solutions and one becomes more vulnerable.

**Did You Know?**

*Russ Harris, in his book "The Happiness Trap," highlights how 80% of one's thoughts contain negative content* [11]*! It appears that humans have likely been hardwired to think in unhelpful ways to increase survival in the "here-and now," according to evolutionary theories* [12]. *In this regard, thinking was optimized for survival (protective and defensive) rather than exactitude, which likely maintains the negatively valanced "initial threat appraisal" cognitive system. Indeed, Lazarus and Folkman's model of psychological stress is consistent with this idea* [13, 14]. *They have posited that individuals initially appraise their environments for their threat value (primary appraisal) in order to then determine the most adaptive behavioral response to the situation (secondary appraisal) that will optimize safety/survival. These appraisals then determine the nature and magnitude of psychological reactions and their accompanying physiological adjustments.*

**Key Points**

- Thoughts are not necessarily facts but one can tend to live and react as if they were.
- When thoughts are negative, they can bias one's viewpoints and lead to distorted interpretations of experi-

ences and relationships that can decrease resilience and increase vulnerability to stress.
- Thoughts are often automatic and not consciously apparent until strong emotion is triggered that is *incongruent* with the situation – "emotional overreactions."
- Contributing to emotional overreactions are "thinking traps" or ways of thinking that correspond to beliefs, assumptions, or expectations about self, others, and how certain situations *should* unfold.
- When thinking traps conflict with the context or what is happening, one can become *psychologically inflexible* and especially so when faced with unexpected situations and challenges. In these instances, managing the unexpected flexibly and challenging thinking to respond more constructively becomes difficult.

## Defining Thinking Traps

Everyone falls into common thinking traps, initially identified by Beck and later added to by Burns [9, 10]. Understanding what they are can help one to label them when they arise, in order to promote psychological flexibility, healthier thinking, adaptation, and ultimately building resilience. However, it is important to highlight that healthier thinking does not always mean thinking more positively. Healthy or balanced thinking that arises from psychological flexibility means examining *the entire* situation and what is happening (the positive, negative, and neutral). In some situations, it is *entirely normal* and healthy to feel upset and have negative thoughts. The following are some examples of common thinking traps [9, 10].

**All-or-nothing thinking:** Sometimes called "black and white thinking"; the tendency to view all experiences as fitting into one of two categories (positive or negative, good or bad) without the

ability to place oneself, others, and experiences along a continuum.

> If I am not perfect, I have failed.
> Either I do it right or not at all.

**Overgeneralizing:** The process of formulating rules or conclusions on the basis of limited experience and applying these rules across broad and unrelated situations.

> Everything is always bad.
> Nothing good ever happens.

**Mental filter/selective abstractions:** The process of exclusively focusing on one negative aspect or detail of a situation, magnifying the importance of that detail, thereby casting the whole situation in a negative context.

> I met a lot of great people at the party, but one guy didn't talk to me. There must be something wrong with me.

**Disqualifying the positive:** The tendency or process of rejecting or discounting positive experiences, traits, or attributes.

> That doesn't count.

**Jumping to conclusions:** The process of drawing a negative conclusion, in the absence of specific evidence to support that conclusion.

> My supervisor didn't stop to say hello. She must not like me very much.

**Fortune telling:** The process of foretelling or predicting the negative outcome of a future event or events and believing this prediction is absolutely true for you.

> I don't think those people will like me so I am not going to bother to talk to them.

**Mind reading:** The tendency to perceive someone is thinking or feeling something about you (either positive or negative), without specific evidence to support that conclusion.

> I know that she doesn't really like me even though she is talking to me.

**Magnification:** The tendency to exaggerate or magnify either the positive or negative importance or consequence of some personal trait, event, or circumstance.

> I'm going to make such a fool of myself, everyone will laugh at me, and I won't be able to survive this embarrassment.

**Minimization:** The process of minimizing or discounting the importance of some event, trait, or circumstance.

> I got that award but there wasn't a lot of competition.

**Comparison:** The tendency to compare oneself whereby the outcome typically results in the conclusion that one is inferior or worse off than others.

> Even though we went through the same training program, she is so much smarter and more successful than I am.

**Should statement:** The process of applying personal standards of behavior, standards for other people, or standards about the way the world functions in all situations involves use of words like "should," "ought," and "must."

> I should be able to handle this without getting upset and crying.
> He should have given me more information; how was I supposed to know what to do?

**Labeling:** Assigning labels to ourselves and other people, usually negative.

> I made a mistake at work. I'm stupid!
> My boss told me I made a mistake. My boss is a total jerk!

**Personalization:** The process of assuming personal causality for situations, events, and reactions of others when there is no evidence supporting that conclusion.

> The problems in our relationship are completely my fault.

**Emotional reasoning:** The predominant use of an emotional state to form conclusions about oneself, others, or situations. Assuming that because we feel a certain way, what we think must be true.

> I feel embarrassment, so I must be an idiot.
> I feel anxious when I fly, so airplanes must not be safe.

**Externalization of self-worth:** The development and maintenance of self-worth based almost exclusively on how the external world views you.

> I am a nobody if she isn't my friend.
> If I don't get any recognition for what I have done I won't feel good about myself.

**Skill-Building Exercise: Identify Your Thinking Traps**

Take some time to review the common thinking traps described above.

Do you recognize your own common thinking traps or unhelpful thoughts, and what are they?

## Check Your Learning: Thinking Traps

Match the statements below to the common thinking traps reviewed in this module (adapted from [15]):

1. If she doesn't approve of me, I am not worth anything.
2. Bad things will always happen to me because I am unlucky.
3. I know that most people don't really like me and think about me in a negative way.
4. When good things happen to me, it is hard to feel good.
5. You either click with someone or not, there is no in-between.
6. When bad or serious situations arise, I don't make a big deal about it.
7. The only way you know you succeed is if you can keep up with or be like other people.
8. I tend to blow things out of proportion even when it isn't really important in my life.
9. I can almost always predict how and when things will go wrong in my life.
10. What others think about me is more important than what I think about myself.

11. It doesn't matter what my choices are, I always make the wrong one.
12. The only way to make decisions is based on my "gut" feelings.
13. I tend to jump to conclusions rather than carefully reviewing what happened.
14. When bad things happen in my life, it almost always has something to do with the way I am.
15. It is hard for me to feel good about myself without recognition from others.
16. Things must always unfold the way that I want them to if I am to be happy.
17. When bad things happen, it is always my fault.
18. I know that people criticize me and think negatively about me without having to ask.
19. There are not a lot of things that I can do that are better than what others can do.
20. I always feel responsible for things that go wrong in my life even when it is unexpected.
21. I focus on what I am doing wrong instead of what is going well.
22. Things are either really good in my life or really bad.
23. I always notice the negative details in a situation and then ruminate about it.
24. I have a tendency to amplify the importance of negative events, even when they are minor.
25. I can always tell with certainty when things will go wrong in any given situation.
26. I have a lot of "should," "oughts," and "musts" in my life.
27. I am more focused on what I am not succeeding at, rather than what I am doing well.
28. I have been known to blow things out of proportion.
29. Most people can do things better than I can.
30. When something goes wrong, it is usually because of something I did.
31. I tend to think the worst is going to happen even if there is a possibility that it won't.
32. Things must be a certain way in order to work out.
33. If I feel a certain way about something, I am usually right.

**Answer Key**
Externalization of self-worth: 1, 10, 15
Fortune telling: 2, 9, 25
Mind reading: 3, 18
Disqualify the positive: 4, 21
Black/white thinking: 5, 22
Minimization: 6, 27
Comparison: 7, 19, 29
Magnification: 8, 24, 28
Overgeneralization: 11, 14
Emotional reasoning: 12, 33
Jumping to conclusions: 13, 31
Selective abstractions: 23
Should statements: 26, 32
Personalization: 17, 20, 30

## Putting It All Together: Guide to Balanced Thinking

1. *Identify your thinking trap.* Write down your automatic negative thoughts so you can see which thinking traps you are using. This will make it easier to think about the problem and see it in a more realistic way.
2. *Examine the evidence.* Instead of assuming your negative thought is true, examine the actual evidence for it. For example, if you feel that you never do anything right, you could list several things you have done successfully.
3. *Don't hold double standards.* Instead of putting yourself down in a harsh and condemning way, talk to yourself in the same compassionate way you would talk to a friend or loved one with a similar problem.
4. *Think in shades of gray.* Instead of thinking about your problems in all-or-nothing extremes, evaluate them on a range from 0 to 100. When things do not work out as you'd hoped, think about the experience as a partial success rather than a complete failure.

5. *Be open to alternative explanations.* Recognize that there are many possible explanations or interpretations of events in our lives. Your belief may only be *one* of many possible explanations. Don't jump to conclusions!

## Mindfulness to Accept and Let Go of Thoughts: Case Scenario

***Consider the following vignette***

Lauren, a resident in family medicine, has been able to increase awareness of her negative automatic thoughts related to competency that are often triggered in evaluation situations. After careful self-reflection, Lauren has become more aware of her tendency to start feeling unwell (stomach upset, feeling flushed, "coming down with something") that often precedes scheduled evaluation meetings with her various supervisors across different rotations. This has resulted in her frequently having to cancel these meetings and reschedule them as she is often too unwell to attend. When these meetings are eventually rescheduled, she is aware of feelings of dread and anxiety as she is now worried that she is being perceived negatively by her supervisor for having had to cancel. Already concerned that "I probably did something wrong" by cancelling, she notices that this negative automatic thought also extends to those clinical encounters where she knows she is being evaluated. At evaluation meetings, Lauren is understandably quite tense and anxious and although she initially feels quite relieved after receiving generally positive feedback regarding her performance (which is more often the case than not), the relief is temporary as she later begins to ruminate and worry about the areas the supervisor pointed out that she could work on. She also starts to worry about her next evaluation because she is convinced that her supervisor does not really like her even though she is quite pleasant toward her; Lauren is quite convinced that the times she has been nice to her have only been when other staff are around. Armed with an increased awareness of her negative thinking style, Lauren attempts to think more positively, hoping that it will stop the negative thoughts and self-evaluation and reduce her performance anxiety.

Lauren starts to notice that she is unable to think positively despite her best efforts as she often finds herself not really believing what she is trying to cognitively reframe to be more positive. She finds herself becoming more focused on her inability to "change and stop" these negative thoughts which then triggers further negative self-evaluation regarding her inability to change them.

This vignette illustrates how increasing awareness of thoughts is not necessarily conducive to cognitive reframing or changing thoughts or feelings. This can be particularly challenging for individuals with negatively biased thinking patterns that have become entrenched and are developed and maintained by negative beliefs and assumptions linked to rigid and fundamental negative core beliefs (that are often very difficult to shift). Additionally, this vignette also highlights how hyper-focus on trying to "stop, change, or control" negative thoughts is often more emotionally disruptive and counterproductive rather than helpful. Indeed, "what we resist, often persists" has empirical support. The Ironic Process Theory demonstrates the paradoxical effects of thought suppression whereby instructing people not to think about a specific thing, paradoxically makes it more difficult to stop thinking about it, leading to rumination which makes these thoughts even more likely to reoccur [16].

In the case vignette, utilizing a mindfulness approach could help Lauren work toward accepting that she cannot control her thoughts or feelings. Rather, cultivating her awareness of her negative thoughts and feelings in a nonjudgmental manner would allow her to regulate their impact without getting caught up in them. This would then allow her to change her relationship to her thoughts/feelings to better manage them without exerting any active effort to try and change them. By doing this, Lauren would be able to realize that the content of her thoughts and emotions is less important than how she is letting them affect her.

At the core of mindfulness, Jon Kabat-Zinn has defined the process as one that involves paying attention in a particular way, on purpose, in the present moment, with nonjudgment [17, 18]. This approach differs from a conventional cognitive behavior approach, which often relies on cognitive reappraisal strategies that involve a reinterpretation or reappraisal of thoughts and situ-

ations to regulate emotional experience that is not always possible [19, 20]. It has been proposed that while both reappraisal and mindful emotional regulation share common features of attention, mindful emotional regulation requires two processes that are distinct from reappraisal; attention to the present moment sensation (not delving into memory or cognitive elaboration) and equanimity, that is, refraining from judging experiences to be intrinsically good or bad [21]. In Lauren's situation, her repeated engagement with her thoughts only serves to exacerbate her negative mood state by further triggering negative self-judgments that cannot be voluntarily overridden, which is where a mindfulness approach could be helpful. By actively choosing to pay attention in a non-judgmental way to her present-moment experience, she essentially limits cognitive elaboration in favor of momentary awareness, which essentially reduces automatic negative self-evaluation and increases tolerance for negative affect.

There is empirical support that combining mindfulness with cognitive behavioral interventions can be effective in the reduction of both rumination and worry by encouraging changes in thinking style, or, facilitating disengagement from emotional responses that drive rumination and worry and perpetuate negatively biased cognitive schemas [22]. In this regard, utilizing mindfulness allows a systematic retraining of awareness and non-reactivity, leading to defusion from whatever is experienced and allowing the individual to more consciously choose those thoughts, emotions, and sensations they will identify with, rather than habitually reacting to them [23].

## Mindfulness Strategies to Manage Thoughts and Emotions

The following are some mindfulness strategies to consider when managing thoughts and emotions [17, 24, 25].

1. *STOP strategy*. Consider taking pause to deliberately STOP and respond rather than react. *S*top what you are doing, *T*ake a few deep breaths, *O*bserve your experience just as it is, and then *P*roceed to intentionally respond with appropriate action.

2. *Anchor awareness.* Once you have stopped, consider intentionally directing attention away from distressing thoughts or emotions and instead, anchoring awareness to your breath or to other sensations such as sight, sound, taste, or touch.
3. *Name it to tame it*. Labeling thoughts or emotions you are experiencing can create temporary distance to help stop the negative cycle of rumination, manage emotional intensity, and reduce personalizing the experience. This involves two parts. The first is correctly labeling it, and the second is the way you express it. Using the language of an observer creates greater distance and can be more effective. For example, labeling the experience of anxiety in a social situation can be labeled as "fear that I will say the wrong thing thoughts are showing up for me right now" is preferable to labeling the same experience as, "I am a socially unskilled person."
4. *Acceptance*. Acceptance is an active process that requires effort and letting go of the struggle of resisting, rejecting, or wanting to change something. It does not mean liking, wanting, or choosing what we are feeling or thinking. To help work toward greater acceptance, allow what you are experiencing to be there, make space for it, and give yourself permission to be as you are. This process can free up emotional and cognitive resources that otherwise are often taken up by the enormous cost of struggle and resistance to circumstances that are often not within our control.
5. *Cultivate equanimity and impermanence*. Adopting a nonjudgmental stance toward thoughts and emotions permits greater distance from them and can reduce the negative personalization of these experiences that often serve to escalate rather than attenuate negative emotional states. Recognizing the impermanence or temporary or transitory nature of our thoughts and emotions can increase our tolerance to these experiences because we recognize that they *will pass*.
6. *Let go of control*. Attempting to control thoughts or emotions is often more emotionally disruptive and counterproductive by paradoxically making it harder to stop the thoughts or feelings.
7. *Schedule negative thought or emotion time*. Give yourself permission to temporarily think or feel the negative thoughts or emotion but place reasonable limits on the amount of time. It

might be helpful to write down what you are thinking or experiencing during these times to create distance and opportunities for self-reflection.

## Check Your Learning (Continued)

***Question 1.*** **In considering Lauren's case at section "Mindfulness to Accept and Let Go of Thoughts: Case Scenario", are you able to identify her thinking traps?**

A. **Magnification**
B. **Disqualifying the positive**
C. **Mind reading**
D. **A & B**
E. **B & C**

**Answer: E ✓**
*Although the feedback that Lauren received was generally positive, in choosing to focus on the feedback that was less positive she is discounting or disqualifying the positive and instead, ruminating and worrying about what she has not done well. Lauren is also engaging in mind reading by thinking that her supervisor does not really like her based on what appears to be weak evidence to support that conclusion. Understandably, these unhelpful thinking styles contribute to Lauren's emotional reactivity and escalation in rumination and worry.*

***Question 2.*** **In considering Lauren's thinking traps, what might be the underlying core beliefs that are contributing to her negative thoughts?**

A. **I am unlovable**
B. **Nobody will ever appreciate me**
C. **I am not competent**
D. **Mistakes always happen to me.**
E. **A & C**

**Answer: E ✓**

*Lauren's core beliefs are best captured by option E. Core beliefs are often "I" statements that represent those basic and fundamental beliefs that we hold about ourselves that exist beneath the surface of consciousness. Core beliefs are manifested in and maintained by more surface intermediate and automatic thoughts. Examining the nature and content of Lauren's thinking traps and asking what this would mean for her if it were true allows her to determine that her tendency to worry about whether she is liked and about what she is doing wrong is likely being driven by core beliefs that she is unlovable and not competent, respectively. Options B and D are Lauren's supporting beliefs that maintain these core beliefs as they represent predictions about what others will do (or have done) as a result of these core beliefs. Determining core beliefs can be challenging; however, a laddering or downward arrow technique such as this can be used* [7]. *Using this technique, one can examine their automatic thoughts/beliefs by asking what the consequences would be if each of the thoughts/beliefs were true. In this regard, one can work down the ladder rung by rung to investigate all the different meanings of automatic thoughts if each thought "came true," to eventually uncover the fundamental core beliefs driving them.*

***Question 3.*** **What mindfulness techniques might help Lauren to manage her thoughts and emotions?**

A. **Labeling**
B. **Acceptance**
C. **Deep breathing**
D. **Challenging thoughts**
E. **A & B & C**

**Answer: E ✓**
*Labeling, acceptance, and deep breathing are all examples of mindfulness techniques (option E) that Lauren could use to help her manage and learn to tolerate negative thoughts and emotions without resistance or judgment, which is at the core of a mindfulness approach. In contrast, challenging thoughts (option D) is a cognitive behavioral strategy that relies on cognitive reappraisal strategies such as reinterpretation or reappraisal of thoughts to help regulate emotions.*

**Key Takeaways**

- This chapter reviewed how thoughts and thinking style have a powerful influence on emotional well-being. When thoughts are negative, they can bias viewpoints and lead to distorted interpretations of one's experiences and relationships that can decrease resilience and increase vulnerability to stress.
- The relationship between automatic thoughts, intermediate thoughts, and core beliefs is important to understand in order to increase awareness of the different levels of thoughts.
- When automatic thoughts are negatively biased, they are likely being driven by negative beliefs and assumptions that have been developed and maintained by deep-seated negative core beliefs.
- Awareness of cognitive strategies and common thinking traps can help residents increase their ability to label and identify unhelpful thinking styles to promote psychological flexibility and build resilience.
- Incorporating mindfulness strategies to increase tolerance of negative thoughts and emotional experience that cannot be shifted by changing or challenging them presents a complementary approach to build resilience.

## Additional Resources

Additional mindfulness and cognitive resources are presented in Table 9.3.

**Table 9.3** Selected mindfulness and cognitive resources

| Selected resources | Description |
|---|---|
| *The Free Mindfulness Project* http://www.freemindfulness.org/ | Free to download mindful meditation exercises |
| *On-Line Mindfulness-Based Stress Reduction (MBSR)* https://palousemindfulness.com/ | On-line MBSR training course, 100% free, created by certified MBSR instructor, based on the program founded by Jon Kabat-Zinn |
| *Get.gg* https://www.getselfhelp.co.uk/ | Provides self-help and therapy resources including worksheets, information sheets, and self-help mp3s |

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# 10

# Recognizing Compassion Fatigue, Vicarious Trauma, and Burnout

Lauren Forrest, Mariam Abdurrahman, and Amanda Ritsma

## Occupational Psychological Distress: An Overview

Acute and chronic psychological distress constitute serious occupational hazards in the healthcare profession, with concerning effects on performance, quality of care, and productivity [1–3]. Physicians are vulnerable to a spectrum of these stress disorders over the course of their professional lives, with the medical training period reported as a time of significant psychological distress

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[1, 2, 4]. These stress disorders are not mutually exclusive and may occur concurrently with significant overlap in phenomenology as evident in Fig. 10.1. In this chapter, we focus on three forms of occupational psychological distress: compassion fatigue, vicarious trauma, and burnout. Compassion fatigue and vicarious trauma are often thought of as different types of secondary traumatic stress disorder that occur in people working in occupations with exposure to traumatic situations or events [5]. Burnout applies more broadly as any individual can experience burnout in the context of work-related stress [6].

Physicians generally provide care to patients who are in vulnerable states, and frequently experience the psychological impact of such encounters, as do their interdisciplinary colleagues who share this work and are also influenced by patients' distress. The communal experience of care delivery is highly attuned to the

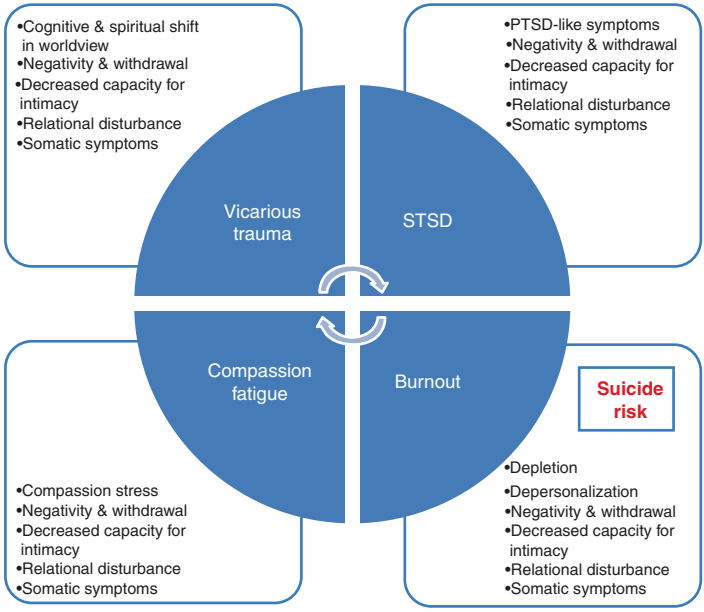


**Fig. 10.1** Features of occupational stress-related disorders. *Note:* STSD = Secondary traumatic stress disorder

social context [1]. Thus, as physicians and their interdisciplinary team members simultaneously attend to the same unfolding events, there is an ongoing process of social appraisal, whereby other team member's emotions serve as a source of information regarding the shared event. This dynamic setting can contribute to psychological distress as physicians are recurrently exposed to patient and inter-collegial distress, such that their emotional state is influenced through emotion contagion and social appraisal processes [7]. As such, the role of self-care, inter-collegial support, wellness efforts, and psychological stewardship programs are essential for the prevention of stress disorders.

**Key Points**

- Psychological distress is a notable and prevalent occupational hazard in medicine and can manifest as one or more stress-related disorders including compassion fatigue, vicarious trauma, and burnout [1, 2, 8].
- Stress disorders are not mutually exclusive and may occur concurrently, with significant overlap in phenomenology [1, 2, 8].

## Compassion Fatigue

### What Is Compassion Fatigue?

Compassion fatigue has been described as one type of secondary traumatic stress reaction that occurs in caregivers of those who are experiencing emotional distress [5]. It is an example of occupational stress that can be a significant source of psychological distress in healthcare practitioners and eventually lead to burnout [9]. It is often referred to as "*the cost of caring*" [5] and develops as a consequence of exposure to patient experiences and suffering, combined with empathy for the patient [10].

Compassion fatigue differs from burnout in that it is specifically associated with exposure to work that requires empathy, potentially leading to suffering, and fatigue in the course of caring for others [5, 10]. It is not limited to a particular specialty within medicine, as in all specialties physicians have the potential to work with patients who are dying, have experienced trauma, or are suffering from chronic illness [9]. The syndrome is also not unique to physicians and can be experienced by a variety of healthcare workers and by anyone in a caregiver role to someone experiencing suffering .

## Recognizing Compassion Fatigue

It is important to understand signs of compassion fatigue in order to recognize it and intervene where appropriate [10]. It is often sudden in its onset, in contrast to the more insidious nature of burnout that develops over time [10]. Symptoms include feelings of helplessness, confusion, isolation, exhaustion, irritability, and anxiety [9–12]. One can feel overwhelmed by work and incapable of obtaining successful outcomes in patients [10]. Often there is a reduced capacity for or interest in being empathic toward patients which can have a significant effect on the therapeutic alliance and treatment outcomes [10, 13]. In some cases, symptoms such as intrusive imagery, hypervigilance, and re-experiencing of trauma can occur. At other times a sense of numbness develops, and there may be a propensity to avoid potential triggers in the workplace in order to reduce distress [9].

A lack of intervention for persistent states of compassion fatigue is one important factor leading to physician burnout [9]. Compassion fatigue can lead to feeling ineffective, depressed, apathetic, and detached [14].

Compassion fatigue has a negative impact on the individual experiencing it; however, it is also linked to reduced efficacy at work and perceived reductions of efficacy in personal relationships [9, 10]. It can lead to misjudgment, clinical errors, and poor

treatment planning [9, 12]. The sequelae of prolonged compassion fatigue in healthcare practitioners include low workplace morale, increased absenteeism, increased turnover, and apathy at work, all of which have been linked to increased patient dissatisfaction [14].

## Factors Associated with Compassion Fatigue

### Personal Factors

Care providers with higher capacity for feeling and expressing empathy are at higher risk of experiencing compassion fatigue and burnout. Those who view themselves as "rescuers" are at an even higher risk of experiencing the distress of compassion fatigue or burnout [10]. In contrast, those with an ability to emotionally detach from difficult and demanding patients have more protection from these occupational hazards and also demonstrate improved concentration, time-rationing, and maintenance of impartiality [10]. Effective care of self and others therefore relies on a delicate balance between empathy and healthy emotional detachment from the work.

### Professional Factors

The work of a healthcare professional is inherently high risk for leading to compassion fatigue [12, 14–17]. As part of daily work, physicians are required to bring their whole selves to work toward the healing of others. Add this to the ever-increasing demands in our current healthcare system and it can feel like the need to give of oneself is never ending. To not give all of oneself to the profession of medicine can lead to feelings of guilt and shame. Sometimes the expectations of patients, families, and supervisors can feel infinite. This situation fosters a high degree of compassion fatigue [17, 18].

Other professional factors such as the patient population, type of work, and length of work hours can contribute to the development of compassion fatigue. Treating a higher proportion of com-

plex patients, or those with higher degrees of trauma and suffering are associated with higher levels of compassion fatigue [9]. While compassion fatigue can occur in any specialty in medicine, specialties with a higher proportion of patients who have experienced trauma, chronic illness, or death tend to have higher levels of compassion fatigue [10]. Longer work hours have also been associated with higher levels of compassion fatigue [9] .

### Organizational and System Factors

It is important to understand the organizational factors that can contribute to the development of compassion fatigue. Physician trainees have little autonomy over their schedules, and are often required to work long hours, sometimes in tasks that are not particularly beneficial for learning [19]. There is a fine balance to achieve in order to ensure learning objectives and competency is met by the trainee, while also considering that independence in delivering patient care and clinical decision-making is key in training competent physicians [19]. Academic centers may rely on resident staff to complete a range of clinical duties that are not necessarily beneficial for learning, and take significant time (e.g., a resident being required to transport their patient for urgent medical imaging) [19]. Physicians and physician trainees are also exposed to the repeated challenge of treating increasingly complex patients in a system operating with reduced resources leading to higher numbers of new patients, more complex medical problems, and shorter length of stay placing unrealistic expectations on the healthcare team [15, 19–21]. With these increasing demands on trainees, there is often little opportunity to engage in self-care or to have frank discussions about their own emotional reactions to patients, both of which can help to prevent or reduce the experience of compassion fatigue [9, 10, 22, 23].

The abovementioned systemic issues also contribute to working in a strained healthcare system where supervisors and other healthcare professionals are also experiencing compassion fatigue. This becomes another contributing factor leading to compassion fatigue [15].

While challenging working conditions are a fact of a career in medicine, it is important to focus on modifiable factors that may mitigate the deleterious effects of these conditions. The individual may need to engage in some reflection in order to understand what things they need to keep themselves well while systemic change is occurring at the level of the institution and may involve changes to policies and curricula [22]. Advocating for systemic change may be one way that long-term shifts are made in the way healthcare is delivered. An in-depth discussion of this is beyond the scope of this chapter and is covered in Chap. 19.

## Early Interventions

Strategies for promoting physician resilience and well-being are covered in detail later in this book; however, this section will highlight one intervention that can be helpful specifically in addressing compassion fatigue. Balint groups were first developed after World War II by Dr. Michael Balint and consist of groups of doctors who meet regularly to discuss patient care situations that have been particularly difficult to manage. These groups are typically led by a psychoanalyst/psychiatrist and are intended to support physicians' identification of their own emotional reactions, which in turn can allow work toward appropriate emotional boundaries with the patient. There is benefit in such sharing among peers, as these types of groups allow physicians to debrief, normalize emotional reactions, reduce stress, reinforce personal value, and formulate appropriate patient-physician boundaries [10].

**Did You Know?**

*Balint groups are groups of physicians, typically led by a psychiatrist or psychoanalyst that meet to discuss personal reactions to their patients. This setting is one example of an intervention to help physicians manage and prevent compassion fatigue and burnout [10].*

**Key Points**

- Compassion fatigue is a phenomenon experienced by healthcare workers leading to loss of empathy and can occur in anyone who engages meaningfully with the suffering of others [5, 15].
- When recognized early, interventions such as Balint groups, which address personal reactions to patients, can support resolution of compassion fatigue and prevent physician burnout [10].

## Vicarious Trauma

### What Is Vicarious Trauma?

Healthcare providers witness some of the most acutely distressing events in patients' lives. In the process, healthcare providers may experience vicarious trauma. Vicarious trauma is the internal shift in emotions, spirituality, and worldview that occurs over the course of indirect exposure to trauma, particularly for clinicians working predominantly with trauma survivors [11, 24]. Clinicians working in such settings are at increased risk of vicarious trauma as they attempt to reconcile witnessing horrific events. Over time, the cumulative physical, spiritual, and emotional residue of this work can be a source of intense psychological distress. Specifically, vicarious trauma may manifest in secondary traumatic stress disorder (STSD) as defined in the DSM-5 diagnostic criteria for acute stress disorder and post-traumatic stress disorder (PTSD) [25].

The DSM-5 recognizes vicarious etiologies of trauma, and three out of four Criterion A items for acute stress and post-traumatic stress disorder pertain to vicarious experiences of trauma [25]. In terms of healthcare staff, vicarious trauma and secondary traumatic stress may stem from "witnessing in person, the event(s) as it occurred to others, and/or experiencing

repeated or extreme exposure to aversive details of the traumatic event(s)" [25].

The witnessing of trauma is not solely a visual event, but extends to the effects of aural and olfactory exposure and encoding of traumatic events. Healthcare staff in acute care settings may be more vulnerable to visual and olfactory exposures to trauma, particularly those working in the emergency department, trauma surgery, and intensive care units. In contrast, in settings such as primary care and mental health, the telling and retelling of events constitutes a core feature of the care process. This results in cumulative and recurrent aural exposure of staff to traumatic stories as they attempt to understand the narrative and in turn formulate appropriate treatment plans. This occupational hazard varies by setting, with healthcare staff in correctional facilities, forensic mental health settings, and military clinics being at higher risk of developing vicarious trauma and associated psychological distress [8, 17, 26].

Although generally acknowledged and increasingly recognized in the scientific literature, vicarious trauma has not been met correspondingly with more robust occupational health programs [8, 11, 24]. Such trauma stewardship is essential in healthcare, to protect and promote the well-being of frontline care providers, and should be a system priority.

## Vicarious Trauma, Secondary Trauma, and Secondary Traumatic Stress Disorder

In the mental health setting, vicarious traumatization is a process through which a therapist's inner experience and conception of the world is negatively transformed through empathic engagement with traumatized patients [11], a process of social appraisal and emotional contagion [7]. As such, vicarious trauma captures an indirect trauma exposure with a resultant shift in cognitive schemas, although it does not always result in a clear clinical disorder.

Over time with recurrent vicarious exposures, the risk of clinical manifestation of secondary traumatic stress disorder increases. For the purpose of this chapter, vicarious trauma and secondary

trauma will be used to capture the phenomena of indirect and usually recurrent exposures to traumatic events and the reaction to these exposures. In contrast, secondary traumatic stress disorder denotes the potential outcome of a clinical disorder with hallmark features of post-traumatic stress disorder.

## Factors Associated with Vicarious Trauma: Personal, Organizational, and Societal Factors

Healthcare workers can reasonably expect to experience the impact of witnessing catastrophic events, recurrent aversive encounters, and hearing descriptions of such events by their patients. However, the risk of a resultant traumatic response is dependent on a number of factors, broadly captured by personal factors, work environment, and broader cultural context, as illustrated in Fig. 10.2. These factors interact in a complex manner and vary from one clinical environment to the next.

In terms of the personal factors illustrated in Fig. 10.2, these exist within the broader sphere of the work environment and the sociocultural context. Personal factors including personal history,

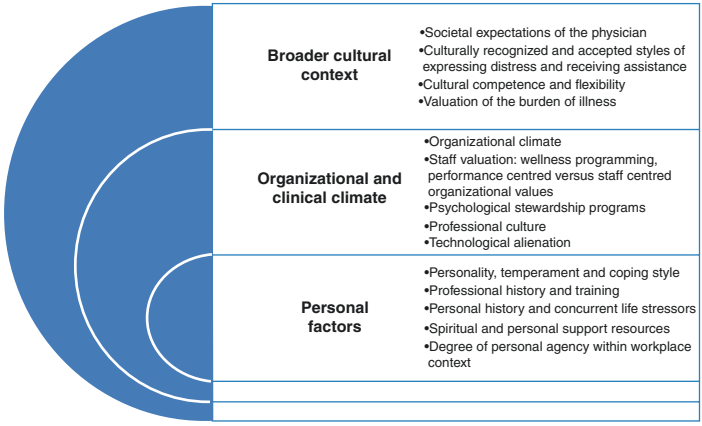


**Fig. 10.2** Interactive risk factors associated with vicarious trauma and occupational psychological distress

professional history, and professional training strongly influence the ability to recognize risk and employ help-seeking behavior to address compassion fatigue, burnout, and vicarious traumatization. Defensive styles of seeking help rather than avoiding or retreating from situations are protective. A more passive style of coping such as retreating, avoidance, and isolation increases the risk of vicarious traumatization [24]. Similarly, the degree of perceived self-agency within the immediate work environment is important. In organizations with very hierarchical top-down approaches, the opportunity for staff to proactively elicit and utilize occupational wellness supports is more constrained.

The broader societal and cultural context shapes the manner in which distress is expressed and managed in the clinical setting. Organizational climates that provide ongoing training and support to staff for occupational psychological distress are likely to have a healthier workforce than settings in which there is no added training and no psychological stewardship [8, 24]. As such, when trainees are considering potential employers, it is helpful to know which healthcare organizations value staff as part of their mission, vision, and values. In addition, one should consider the translation of these intentions into practice (Table 10.1).

The organizational climate is shaped by societal expectations of the physician and societal valuation of healthcare. As a reflective exercise, consider the questions posed below.

**Skill-Building Exercise: Pause and Reflect**

In order to reflect on organizational climate at your workplace, consider the following questions:

- What do you expect of yourself as a physician?
- What does your employer expect of you?
- What are the societal expectations of physicians locally?
- As a medical trainee, consider the core values of your training program regarding the health and wellness of its trainees. Are these expectations realistic and sustainable?

**Table 10.1** Translating the mission statement into practice: questions to answer

| |
|---|
| Does the organization have a psychological stewardship program? |
| Does the organization promote staff wellness and development with any of the following:<br>Staff wellness program<br>Professional education and development<br>Interprofessional support |
| Is promoting staff self-efficacy explicitly valued as a shared organizational goal? |
| Is staff recognition important to the organization: are staff contributions recognized? |

At times, these expectations are unsustainable and at odds with maintaining the well-being and productivity of the physician work force. More concerning is the professional culture of medicine which has historically been one of selflessness combined with discomfort for self-care [3, 27, 28]. The tension between the values of sacrifice inherent historically in medicine and the growing recognition of the risks of burnout gives rise to a set of challenges in which seemingly disparate values are hard to reconcile.

Preseenteeism refers to work attendance while unwell and is closely linked with stress-related disorders in medicine [28, 29]. Stress-related disorders encompass a broad spectrum of disorders, including the three discussed in this chapter. Physicians have high rates of sick presenteeism [28, 30] and alarmingly high rates of stress-related disorders [7], with rates varying by clinical setting, specialty, and stage of career. For example, estimates of burnout prevalence in North American physicians range from 30% to 67%, while among residents the range is 38–76% depending on specialty [2, 31–33]. In terms of traumatic stress disorders, the point prevalence of PTSD among emergency physicians is reported at 15.8% for PTSD [34]. Consequently, self-assessment and ongoing self-scanning from the onset of medical training and through the

practice years is a necessity for appropriate self-care and professional growth. Chapter 18 provides resources for self-assessment and ongoing self-scanning, as well as resources for self-care.

Compassion fatigue and burnout are perhaps the most evident forms of sick presenteeism, as physicians very often continue to work long hours despite recognizing that they are depleted and are operating in rote fashion. This is highly concerning as it can have profound personal and professional implications. To the individual physician, this can result in a decline in the general state of health, with increased rates of anxiety and depression [3, 22, 28, 35, 36]. The professional implications include less effective bedside manner, decreased productivity, and decreased quality of patient care [22, 35, 36].

**Did You Know?**

*Stress-related disorders are not solely psychological in their manifestation. Stress disorders are recognized risk factors for adverse physical health outcomes including weight gain, sleep disorders, hypertension, and cardiovascular morbidity [37].*

In terms of the societal valuation of healthcare, there are distinct differences in the funding of different fields of healthcare. For example, although the psychiatric burden of illness is significant in the general population, this does not translate to proportionate resource distribution which in turn impacts funding for psychological stewardship programs within healthcare organizations. In such settings, it can be difficult for trainees and staff alike to access wellness resources, supports, and appropriate professional development. If wellness programs exist, is the organizational attitude one of promoting or penalizing staff uptake?

Recognition of vicarious trauma, resultant secondary traumatic stress, and their distinction from other adverse psychological states can be challenging. The negative alterations in cognition and mood state of vicarious trauma may be erroneously attributed to burnout, somatic symptoms may be attributed to an anxiety disorder or other medical condition, while perceived detachment may be seen as an element of compassion fatigue; however, vicarious trauma and secondary traumatic stress disorder should be considered if there are concurrent features of avoidance and altered arousal. While psychological distress accompanies all these conditions, it would be important to be alert for the accompanying features that may help distinguish the three conditions such as outlined in Fig. 10.1. Recognizing each condition and providing appropriate intervention is essential as each is correlated with adverse impacts on physician health, quality of care, productivity, and work satisfaction [7].

Vicarious trauma occurs as a result of cumulative and recurrent exposure to traumatic material [24]. The sustained underlying stress of healthcare work combined with exposures to aversive or catastrophic events and patient's narratives creates a system in which the interaction of the clinical environment, cultural context, and personal variables may coalesce to tip the balance toward burnout, compassion fatigue, and vicarious trauma as illustrated in Fig. 10.3. Vicarious trauma can result in secondary traumatic stress disorder when it produces PTSD symptoms including avoidance, anhedonic cognitive and emotional states, hyperarousal, and intrusive reliving of the event. This outcome is not well measured but is certainly more prevalent in settings such as military medicine, disaster medicine, and mental health clinics [8, 17, 26].

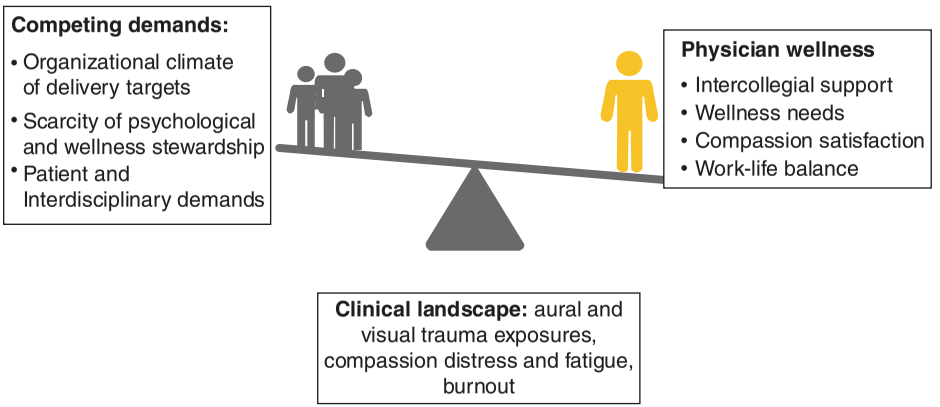


**Fig. 10.3** The tipping point: achieving balance in the dynamic landscape of medicine

## Early Intervention at the Education and Training Level

There is a widely held view that the above noted acute and chronic occupational features of medicine constitute an inevitable and routine aspect of healthcare work, and are as such, unavoidable occupational hazards of the profession [38, 39]. Of concern, acculturation to the idea that self-care is secondary in this environment of sustained occupational stress occurs as early as the learning and trainee years and is pervasive in academic medicine [39]. Trainees who are exposed to psychologically distressing events have access to support and debriefing through their training program; however, they may not receive support in their clinical rotation. While the trainee should access their program resources, it requires a balance between rotation obligations and protected time which varies across training programs. This raises the question of the potential utility of completing a psychological distress inventory in advance of a resident's routine meeting with their program director. The Professional Quality of Life (ProQOL) Tool and the Maslach Burnout Inventory are discussed in this chapter; however, there are a number of other psychometrically sound tools for evaluation of items such as work stress, work satisfaction, resilience and burnout, some of which are explored further in Chap. 19.

Humanistic medicine strives to deliver holistic patient-centered care. Physician performance, patient safety, and the quality of patient care are intertwined with organizational health [40–42]; thus, humanistic healthcare requires salubrious health systems. For physicians, the system begins as early as the medical education years through professional commitment to the health promotion and wellness components of their education and training curriculum. The progression of clinical knowledge and skills occurs concurrently with developing added proficiency with wellness. Self-compassion and wellness are associated with enhanced resident empathy, which enhances medical care and competency [23, 43, 44]. Just as an empty bowl can offer no sustenance, so too must medical trainees and physicians recognize the importance of refilling their own bowl in order to offer nourishment to patients.

Trauma stewardship is more likely to have good uptake when it is introduced as a core organizational value in healthcare facilities concurrent with disseminating the same values in medical education and training programs. This would enable learners to be early adopters who can translate the principles into practice during their formative stages of training. In certain healthcare settings such as mental health, military, and forensic services, the recurrent and pervasive nature of staff exposure to distressing life narratives and the high rates of violence in this clinical setting behoove investment in psychological health and trauma stewardship as a priority in promoting staff well-being and productivity. Promoting the healers' health and healing the healer should indeed form a core feature of the healthcare work environment, as this in turn improves physician performance and the quality of patient care [40–42, 45, 46].

## How Do We Approach Vicarious Trauma and Psychological Distress?

The management of psychological distress is an inherent aspect of holistic healthcare. Much resource and effort is appropriately focused toward delivering comfort and treatment to patients, but with significantly less invested in managing the negative health effects of bearing witness on healthcare professionals. Herein lies the paradox of an occupation devoted to healing and restoration, palliation and support, but limited in applying these precepts to those at the forefront of healthcare delivery.

Healthcare professionals routinely provide emotional support and promote holistic healing in the course of patient care. However, the very process of delivering such care can expose providers to secondary trauma and over time and compromise their ability to provide compassionate care, particularly when the occupational environment offers limited support, inadequate promotion of self-compassion and self-care, and lack of wellness stewardship. Furthermore, the cumulative effect of vicarious

trauma is that of decreasing effectiveness and productivity; thus, it is essential that programs and workplaces implement opportunities for healthcare teams to debrief and foster other workplace wellness techniques. This will necessitate ongoing shifts in professional culture and organizational climate.

What does wellness stewardship look like? Any approach to psychological health stewardship must be systems focused as no single factor is sufficient on its own. As illustrated in Fig. 10.3, the healthcare environment is multilayered, with physicians and their allied health colleagues nestled within the clinical and organizational setting, which is in turn encapsulated within the broader sociocultural context. Any approach that aims to alleviate the psychological burden of healthcare work can only be effective when it examines the influence and interaction of these systemic factors. Even the most resilient physician struggles to sustain wellness in an organizational climate of intolerance, an absence of intercollegial support, a lack of recognition of their workplace contributions, and with technological alienation. The issue of technological alienation is rapidly becoming more evident as processes become automated or result in increased solitary work with digital technology. The role of inter-collegial support in healthcare has historically been a source of professional strength; thus, the role of technology in provider alienation needs to be carefully understood so as to minimize negative impact on physician wellness and patient care.

Emotional regulation is crucial to maintaining well-being, fostering resilience, and preventing compassion fatigue, burnout, and the transition of vicarious traumatization to a secondary traumatic stress disorder [7]. Healthcare organizations must give serious consideration to this issue, as these facets of occupational psychological distress are tightly linked with physician and healthcare worker performance, productivity, effectiveness, and long-term retention.

Take a moment to reflect on yourself and your residency training to date. If you could measure your professional quality of life, how would you score on measures of vicarious trauma, compassion fatigue, and burnout?

**Did You Know?**

*The Professional Quality of Life (ProQOL) Measure is the most commonly used measure of the negative and positive effects of helping others who experience suffering and trauma. The ProQOL has subscales for compassion satisfaction, burnout, and compassion fatigue, and has been in use since 1995 [47].*

Occupational psychological distress in healthcare continues to gain attention, as it can have deleterious effects personally, professionally, and at a broader societal level by way of an unsustainable workforce. Fortunately, there is increasing discussion in healthcare about how to build and fortify physician resilience, how to determine risk indicators of sick systems, and how to recognize the spectrum of occupational psychological distress. This has concurrently generated many exciting initiatives and toolkits to combat the issue, with a number of these valuable resources described in the final chapter. When incorporated as early as the undergraduate medical education years, wellness practice can be firmly established by the time trainees become physicians in practice.

## Burnout

### What Is Burnout?

Many of the terms used to describe concepts relating to wellness and distress tend to be used interchangeably, and although interrelated, are not synonymous. Stress and burnout describe different, equally important phenomenon. Where stress describes our reactions to a given situation, either acutely or chronically, burnout is a work-related syndrome. "Burnout" was first coined in the literature in a psychology journal by Herbert Freudenberger in 1974 in his paper entitled *Staff Burnout* [6]. Freudenberger began writing about the phenomenon that he was experiencing as a psychologist.

Since this term was coined almost 50 years ago, the term "burnout" has been used multiple times within the literature with its core tenets remaining the same. Burnout is a work-related syndrome consisting of the following triad:

1. Emotional exhaustion, feeling that there is nothing left to give, and that one's emotional resources are depleted [48].
2. A sense of depersonalization, which describes a negative, cynical, or detached response to one's job or others [48].
3. A reduced sense of personal accomplishment; feeling less fulfillment or effectiveness in one's work [49].

Burnout is not a diagnosis recognized in the DSM-5, outside of a V-code that refers to "other problems related to employment"; however, the International Classification of Diseases, 11th revision (ICD-11), now recognizes burnout. It conceptualizes burnout as *chronic workplace stress that has not been successfully managed* [50]. ICD-11's three dimensions mirror those detailed earlier, and it is emphasized that burnout should only be diagnosed in an occupational context.

## How Is Burnout Measured?

Burnout is often measured using the Maslach Burnout Inventory (MBI) developed by Christina Maslach and Susan E. Jackson in 1981 [51]. It measures the three components of burnout (emotional exhaustion, depersonalization, and reduced sense of personal accomplishment) through 22 items that are divided into three subscales [48]. The items within the inventory are composed in a way that allows respondents to answer based on their attitudes. Respondents answer on a 7-point scale, with possible responses ranging from "never" to "every day." This scale has demonstrated both reliability and validity. It demonstrated convergent validity multiple ways: through behavioral ratings by someone well known to the subject, through specific job characteristics that were known to cause burnout, and through various measures that were hypothesized to be correlated with burnout [48].

## Prevalence of Burnout in Physicians

In recent years, burnout has been seen as an occupational hazard for those in medicine. The rates of burnout in physicians in training and staff physicians continue to grow. A survey by the Canadian Medical Association noted increasing levels of distress among Canadian physicians (both staff physicians and residents) [32]. They found that 30% of Canadian physicians reported high levels of burnout. This survey looked at the components of burnout as well as burnout as an overall condition. They found that physicians note especially high levels of emotional exhaustion (one component of burnout). They also found that significantly more residents (38%) reported burnout compared to staff physicians (29%) [32]. This data mirrors the results of Resident Doctors of Canada's (RDoC) 2018 survey [52]. This survey found 51.9% of respondents self-screened as positive for burnout (these figures varied by specialty). These figures are also higher than what we are seeing in the general population confirmed by a study examining rates of burnout, depression, and anxiety amount medical students, residents, and early career physicians in comparison to an age-matched, college graduated population in the United States [2]. Rates of burnout in physician trainees were found to be 49.6–50% compared to rates of burnout in an aged match population at 31.4–35.7% [2].

A study by Shanafelt and colleagues looked at rates of burnout among physicians in the United States compared to the general population [53]. They did this in both 2011 and 2014 and found that burnout was more common among physicians than among the general American working population, a finding that persisted after adjusting for age, sex, hours worked, and level of education. Not only were the results higher in physicians compared to the general population, they were also higher in 2014 compared to 2011. This was consistent across all specialties.

## Factors That Contribute to Burnout in Physicians

Multiple factors in the literature have been noted to contribute to physician burnout, and these can vary based on level of training. These factors can be considered at the level of the individual

(e.g., personality, personal coping style), the level of the medical profession (stigma), and the level of healthcare organizations (high workloads, changing work environments) [54]. Swenson and colleagues reviewed the literature on physician burnout and found that factors such as high workload, inefficient working environment, difficulty with work-life balance, loss of meaning in work and lack of flexibility, autonomy, and control all contribute to burnout. They also found that medical specialty, practice setting, and personality type can contribute to burnout, as do sleep deprivation and medical errors [55].

This highlights the difficult cycle perpetuated by burnout: medical errors are a risk factor for burnout and experiencing burnout is a risk factor for making medical errors. Studies have shown that experiencing burnout increases the risk that one has made a medical error in the past 3 months [36] and that one will make a medical error in the next 3 months [56]. This continues to be replicated in the literature; Tawfik and colleagues found that physician burnout is independently associated with major medical errors [57].

Personality traits can also affect the experience of burnout. Factors such as perfectionism, an exaggerated sense of responsibility, and a need for achievement all put physicians at risk for burnout [58]. Residents and physicians in general, however, have also needed to draw on these once adaptive personality traits to remain successful in medicine – these were likely the personality traits that facilitated admission to medical school and residency positions. Resident physicians are in a unique position where they are beginning to practice like independent physicians, however, still have academic requirements and schedules to which they must adhere. This may augment a sense of lack of flexibility, autonomy and control, especially when coupled with the need for achievement that many residents experience.

In a focus group conducted by RDoC, residents were asked to describe factors related to burnout, and reiterated many of those previously mentioned. In particular, they described feeling a strong sense of responsibility and related pressures that come along with this. One of the respondents stated that “in this field, if our work is not up to par…people die” [59]. Residents also described a sense of needing to sacrifice due to internal and

external/institutional expectations. They spoke about sacrificing their time, their own health (two-thirds of residents often or always go in to work when sick) [52], and at times who they are as a person. One of the respondents stated, "there's this idea of self-sacrifice and the more you're willing to give up yourself […] the better physician you are" [59].

## Barriers to Seeking Care

Despite high levels of burnout, physicians often do not seek the care that is needed. The Canadian Medical Association's national survey found that the top reported barriers to seeking help among physicians include believing their situation is not severe enough, being ashamed to seek help, and not being aware of the range of services available. The RDoC National Survey found that almost 60% of respondents cited lack of control over one's schedule as the most significant barrier to seeking care for their mental health concerns [52]. This can manifest in a multitude of ways. In this same survey by RDoC, almost two-thirds of residents reported that their work schedules do not leave them with enough time for their personal lives. Most residents work more than 60 hours a week, and this can leave insufficient time to seek the optimal support and care that would be of benefit. Furthermore, many residents are uncertain that a counsellor's or doctor's appointment is a sufficient reason to leave work.

This barrier was followed by concern for the existing culture of medicine, particularly the stigma around mental health. In this context, stigma can be multifactorial and is interconnected with being unable to find time to seek care. It includes the stigma portrayed by peers, staff, and supervisors, added to which there may be an internalized stigma that learners bring with them from experiences prior to medicine. This makes it difficult for learners to feel comfortable disclosing the need to seek care for mental health concerns and is also influenced by the fear of repercussions to their training or future job prospects if they ask for this time off. Schwenk and colleagues surveyed medical students for symptoms of depression using the PHQ-9 [60]. They found that when

compared to students with low scores on this depression scale, students with high scores were more likely to endorse statements that they would be less respected or viewed as less adequate than their colleagues who were not depressed. For example, 17% of those with low depression scores felt that telling a counsellor how they were feeling would be risky, compared to 53% of those with higher depression scores. This view helps to further illustrate another reason that residents can be reluctant to seek professional help [60].

The third most cited barrier was a perceived lack of mental health resources that ensure resident confidentiality. Residents have shared concerns about a potential impact on their future career options in terms of job availability and licensing, if they were to come forward with mental health concerns during residency. Dyrbye and colleagues found that nearly 40% of physicians surveyed would be hesitant to seek care for their mental health concerns because of the fear of repercussions to their medical licensure [61]. The authors described these fears as reasonable – more than one-third of state licensure board executive directors stated that a mental health diagnosis noted on an application would be sufficient to sanction a physician [61].

The CMA's 2018 National Survey found that 82% of physicians reported high levels of resilience [32]. Medical students at the beginning of medical school are assessed to be more resilient, less depressed [62], and have healthier mental health profiles [53] overall than college graduates pursuing other fields. However, this profile is reversed 1–2 years into medical school [53].

Maladaptive patterns of managing stress may begin in medical school and continue into residency and independent practice. Montgomery speaks to the concept of the "hidden curriculum" and how this propagates increasing cases of burnout [38]. He speaks to the fact that the antecedents of burnout and iatrogenic medical errors find their roots in the early medical education years. There is a paradox that exists as the years in which a physician can undergo the most formative changes in practice patterns and habits are also the years when they are most vulnerable to the impact of burnout. Montgomery reflects that attempting to retrain physicians after they complete medical school or residency has

been futile as these behaviors and patterns that develop early become deeply embedded [38]. This underscores the importance of intervention early in medical training .

## Why Does Burnout Matter?

The conversation about burnout and physician wellness matters because the system is suffering. Our patients, our physicians, and our colleagues suffer concurrently. Residents are experiencing mental health concerns at alarming rates. Data has shown that 13.7% and 10.8% of residents are bothered more than half of the days or nearly every day by having little interest or pleasure in doing things and by experiencing other symptoms of depression [52]. The terms "depression" and "burnout" are often used interchangeably but represent different concepts which are at times difficult to differentiate.

Bianchi and colleagues state *"the idea that burnout is, in its early stages, job-related and situation-specific whereas depression is context-free and pervasive says nothing about what distinguishes the late stages of burnout from depression, leaving a key problem unresolved"* [63]. Despite the challenging distinction, leaving depression and burnout unmanaged can have devastating repercussions. New research is increasingly showing that physicians have the highest suicide rates compared to all other professions, and the rates of physician suicide are twice that of the general population [64] and are estimated at 40 in 100,000 per year in the United States [65]. It is estimated that one physician dies each day due to suicide [65].

## Individual Versus Organizational-Level Interventions

Individual resilience is not the silver bullet; it is only one very small piece of a much larger puzzle. Most efforts to prevent burnout have focused on improving physicians' personal resiliency rather than their workplaces and training environments.

Unfortunately, the result is that physicians who are more resilient take on greater workloads, and so the problem perpetuates itself [65]. A 2017 meta-analysis by Panagioti and colleagues found that although individual targeted interventions such as mindfulness and resiliency programs have been shown to be helpful and reduce scores on objective measures of burnout, organization-directed interventions are associated with higher treatment effects when compared to physician-directed interventions [66].

There are many organizations that are working toward individual intervention programs, such as the RDoC Resident and Leadership Resiliency Curriculum (https://residentdoctors.ca/areas-of-focus/resiliency/), the McMaster Resilience in the Era of Sustainable Physicians: An International Training Endeavor (RESPITE) program (https://respite.machealth.ca/), the AMA STEPS forward Professional Well-Being (https://edhub.ama-assn.org/steps-forward), among other national and international administered programs. These programs should be viewed as a harm reduction approach to wellness; they can fill an individual's toolbox while cultural and organizational changes are being planned and implemented. For example, organizations such as the CMA have identified that while there are many developments in progress for physician wellness, they are occurring in silos, as most do not know of the work being done elsewhere. Moreover, the CMA's 2018 survey identified that physicians are not aware of the range of wellness programs and services available [32]. Therefore, the CMA has launched a national analysis of the work being done, with the end goal of building a physician wellness virtual hub. Several researchers have looked at how organizational-level approaches can be implemented within healthcare settings and residency programs. The latter is of paramount importance given that the patterns of physician burnout begin early in the training period.

In sum, in this chapter, we have discussed three important forms of occupational psychological distress: compassion fatigue, vicarious trauma, and burnout. There is a growing body of evidence pointing to the prevalence of these phenomena in physi-

cians. It is important to be able to recognize these phenomena in order to make the necessary changes to combat them for the benefit of the physician, as a human, as well as for the benefits of the patients we treat.

## Check Your Learning

Stacy is a fourth-year resident in orthopedic surgery. She is transitioning into fifth year soon and starting to worry about preparing for her upcoming licensing exam. She continues to find meaning in the bulk of her work and is happy with her choice of residency program and specialty. She is involved in an elective multidisciplinary clinic that helps patients who are the victims of domestic violence. Lately, Stacy has noticed she has become increasingly overwhelmed at work and finds it difficult to empathize with patients she sees in the elective clinic. She used to get a sense of purpose and fulfillment in her work there; however, she has begun to feel that her efforts at treating these patients are an exercise in futility as much of the time, her patients do not have the financial or social supports necessary to get out or leave their abusive relationships.

Stacy's partner has noticed a shift in her as well and has spoken to her about feeling that she is less emotionally available at home and has started to seem that she is not present even when they do spend time together. Eventually, Stacy's partner convinces her to arrange a meeting with a social worker affiliated with the postgraduate office.

Through the course of meeting with the social worker over several sessions, Stacy begins to understand that some of the symptoms she was experiencing were related to ongoing exposure to patients with a high degree of trauma. When added on top of day-to-day demands of residency training, clinical responsibilities, and considering the upcoming high-stakes board exam, her own resources were being depleted. Stacy worked with the social worker to develop some strategies that she could use to prevent herself from developing long-lasting compassion fatigue or burnout. She was able to find a mentor in a supervisor

who was willing to talk with her in order to process some of the difficult emotions she experienced in response to the elective clinic in order to develop healthy emotional boundaries with that work.

***Question 1.*** **Which of the following features are common to the stress-related syndromes discussed in the chapter?**

A. **Detachment**
B. **Somatic symptoms**
C. **Withdrawal and decreased capacity for intimacy**
D. **Cognitive shift and disturbance in spirituality**
E. **All of the above**

**Answer: E ✓**
*All the above are qualities common across the spectrum of psychological distress discussed in this chapter, although the degree of each feature may vary from one disorder to the other.*

***Question 2.*** **All of the following are risk factors for compassion fatigue *except*:**

A. **People who detach emotionally from their work**
B. **Working long work hours**
C. **Working with a highly traumatized patient population**
D. **Working with many colleagues who are experiencing compassion fatigue**
E. **Having little control over your work**

**Answer: A ✓**
*People who have a greater capacity to feel and express empathy are at higher risk of experiencing compassion fatigue; however, a degree of this is necessary for optimal patient care. The key is establishing an appropriate balance between empathy and detachment.*

***Question 3.*** **Which of the following is not a known personality risk factor for burnout?**

A. **Perfectionism**
B. **Laissez-faire work ethic**
C. **Need for achievement**
D. **Exaggerated sense of responsibility**

**Answer: B ✓**
*Although a person may have a decreased work output due to burnout, this characteristic is not one that has been shown in studies to predispose to burnout.*

**Key Takeaways**

- High rates of stress disorders and sick presenteeism are present in the medical profession, and should be considered a priority issue as stress disorders influence empathy, performance, and productivity [7, 28, 29].
- "There is no health without mental health" [67] and wellness. Stress disorders are not "all in our heads" as they can combine with other risk factors to manifest in serious outcomes including cardiovascular disease, cerebrovascular accidents, and shortened life span [37].
- Humanistic patient care requires empathy, and empathy-related emotions and their regulation are dependent on physician well-being, thus our effectiveness as physicians is dependent on self-care and self-compassion [23, 44].
- Vicarious trauma can result in secondary traumatic stress disorder. Trainees and physicians in higher risk clinical settings (e.g., forensic and military settings, emergency services, mental health services) should seek and routinely utilize wellness programs to manage this occupational hazard [8, 17].

- Compassion fatigue is a phenomenon experienced by healthcare workers leading to loss of empathy and can occur in anyone who works closely with and engages meaningfully with the suffering of others [5].
- Symptoms of compassion fatigue include feelings of helplessness, confusion, isolation, exhaustion, irritability, anxiety, feeling overwhelmed, and feeling incapable of helping. Conversely, this can progress to a sense of numbness and lead to significant avoidance [5, 10, 16].
- When recognized early, interventions to address compassion fatigue can lead to recovery and prevent progression to burnout [10].
- Burnout is a work-related syndrome comprised of emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment [6, 51].
- Although programming and interventions targeting individuals and skill development are important, systemic and organizational-level interventions lead to overall greater impact in reducing burnout [66, 68].

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# Part III

# Adaptive Strategies to Promote Physician Wellness

# 11 Healthy Lifestyle Behaviors: Physical Activity to Fuel your Mind and Body

Emma Gregory, Alexander Dufort, and Ana Hategan

## The Basics of Physical Activity in Adults

### Defining Physical Activity

Thinking about the multitude of information sources about physical activity can be overwhelming, and each one of us has our own knowledge and experience of what the continuum of physical activity actually encompasses. One may think of activity as anything beyond being sedentary, or as participating in

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sports and exercise, or as improving personal fitness. Before discussing current issues in maintaining physical activity during physician training, it is helpful to define what is meant by physical activity in this chapter, including measures, types, and intensities.

It is commonly believed that individuals just need to "move" their bodies. The World Health Organization maintains the definition of physical activity as "any bodily movement produced by skeletal muscles that results in energy expenditure," thus allowing for a wide range of activities [1]. There are various methods of measuring physical activity beyond subjective accounts, which is fortunate as one often overestimates the amount of physical activity that one does. A study found that participants who wore accelerometers reported an average of 49 minutes of physical activity per day, whereas their accelerometers captured an average of 23 minutes daily [2]. Individuals may use pedometers, accelerometers, heart rate monitors, or other technology to track activity, but researchers often prefer the use of direct observation as these devices are not always accurate.

Physical activity is generally divided into:

(i) Baseline activity (or our activities of daily life)
(ii) Health-enhancing activity (or activities one can add to specifically improve health outcomes)

Important factors in optimizing health-enhancing activity include specific *types* of physical activity and their *intensity*. Types of activities that are familiar from our medical school days include cardiovascular, strengthening, and balance or flexibility training. The authors will review their relevance later in this section. Intensity is defined as the rate at which an activity is being performed and it is classified as light, moderate, or vigorous [3]. One can estimate intensity by using the metabolic equivalent of tasks (METs) which is the energy expenditure of a physical activity as a multiple of our own resting metabolic rate (RMR) [4].

**Did You Know?**

*One metabolic equivalent of task (MET) is equivalent to our resting metabolic rate (RMR), which is about 3.5 milliliters of oxygen per kilogram body weight per minute, and it represents the amount of oxygen used while being sedentary. As an example, reading this chapter is one MET, and this is considered to be of light intensity. Moderate and vigorous physical activity is between 3–6 METs and 7–10 METs, respectively, so one would need to expend at least 3 or 7 times as much energy as when sedentary [4].*

There are a number of resources that identify METs for different physical activities. Table 11.1 documents the METs and intensities of common activities as well as simple physical signs and symptoms that indicate when we have entered each range [5]. Please be reminded that these are averages and do not take into account all individual factors.

## The Current Physical Activity Guidelines

The majority of us likely received at least one lecture in medical school about health promotion that touched upon physical activity and the importance of incorporating this topic into patient care. Even if the topic was raised multiple times, it does not necessarily mean the information was absorbed, as it is often a "taken-for-granted" topic that seems too obvious to review. One likely recognizes that physical activity can be a preventative or even curative intervention, and may have intentions to address it with patients, although these discussions are often put aside.

Physical activity is not only relevant to patient care as it affects us all and yet many of us probably only have a general understanding of what is actually recommended. One study of Canadian

**Table 11.1** Metabolic equivalent of tasks (METs) and intensities of popular activities [5]

| METs | 1–2 METs | 3–6 METs | 7–10 METs | 11+ METs |
|---|---|---|---|---|
| Intensity of activity | Light | Moderate | Vigorous | Maximum |
| Activity examples | Walking | Brisk walking | Jogging | Activity within this range is not necessary to obtain common health outcomes; e.g., jumping rope, sprinting, mountain biking |
| | Yoga | Golfing | Cycling | |
| | Stretching | Dancing | Hockey | |
| | Gardening | Swimming | Basketball | |
| | Sitting | Weight training | Circuit training | |
| | Standing | Home activities | Hiking | |
| Temperature | No increase | Increased Lightly sweating | Hot Sweating | Very hot Heavily sweating |
| Respiration rate and functional impact | No increase Can sing | Increased Can talk | Difficulty talking to others | Too out of breath to talk |

medical students found that while 70% of students were aware of the national guidelines, only 52% knew what the guidelines were [6]. Therefore, it is pertinent to review the latest Canadian Physical Activity Guidelines (CPAG), which were last reviewed by the Canadian Society for Exercise Physiology (CSEP) in 2011 [7]. Australia, the United States, and the United Kingdom have similar physical activity guidelines to Canada [8–10]. For example, the Physical Activity Guidelines for Americans (PAGA) stipulate that adults in the United States should do at least 150 minutes (2 hours and 30 minutes) to 300 minutes (5 hours) per week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) to 150 minutes (2 hours and 30 minutes) per week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity [9]. The CPAG and PAGA have guidelines for children/adolescents as well as for older adults, but the guidelines listed in Table 11.2 apply to adults between the ages of 18 and 64. They address three factors that can result in health benefits for this population [7, 9].

**Table 11.2** Physical activity guidelines for adults [7, 9]

| | |
|---|---|
| Duration | Approximately 150 minutes per week (in at least 10 minute increments) |
| Activity type | Aerobic physical activity |
| Activity intensity | Moderate to vigorous intensity |

However the guidelines assume that individuals are in good general health, and they caution that these may not be appropriate if people are pregnant, have a disability, or a medical condition. It has become clear that many individuals do not meet these guidelines regularly, for example, only 17% of Canadian adults met these guidelines from 2015 to 2016 [2]. However, if individuals are not meeting the guidelines, not only are they unable to reap the full benefits that come with adequate physical activity, but they may also be at risk of particular harms.

## How Physical Activity Guidelines Correlate to Known Physical Health Outcomes

In 360 B.C., Plato stated, "Lack of activity destroys the good condition of every human being, while movement and methodical physical exercise save it and preserve it" [11]. Positive outcomes associated with physical activity often refer to physical health because most of the existing research has focused on this relationship and so there is significant evidence. The existing CPAG and PAGA guidelines set out to answer three main questions, including:

(i) What is the relationship between physical activity and major physical health indicators?
(ii) If a relationship is found, does it increase in a dose-dependent manner?
(iii) To what degree are these guidelines evidence-based? [12].

The CSEP working group completed a systematic review of 254 journal articles up to the year 2008 that were relevant to 18–64 year-old adults and found that the literature supports the Canadian guidelines [12]. Please refer to Table 11.3 for a review of physical health benefits of physical activity. There is evidence of an inverse relationship between physical activity and all-cause mortality, cardiovascular disease, stroke, hypertension, colon cancer, breast cancer, type 2 diabetes mellitus, osteoporosis, and obesity. Specifically, there is Level 2, Grade A evidence to support between 150 and 180 minutes of moderate-intensity activity per week or 90 minutes of vigorous-intensity activity per week, with the most evidence supporting aerobic activity, to be completed throughout the week, for at least 10 minutes at a time [13].

In terms of other types of physical activity, the guidelines provide further recommendations. There is Level 2, Grade A evidence to support doing resistance training to strengthen bones and muscles at least 2–4 days a week. Having good musculoskeletal fitness can reduce premature mortality and risk of falls as well as improve blood pressure, bone mineral density, mobility, functional independence, and general quality of life [13]. Finally, there is Level 3, Grade A evidence to support doing flexibility

**Table 11.3** Physical health outcomes of physical activity

| Physical health outcomes with moderate-vigorous activity | | Average reduced risk |
|---|---|---|
| Mortality | Premature all-cause mortality | 30% |
| Neurological | Cerebrovascular accidents | 25–30% |
| Cardiac | Hypertension | 32% |
| | Cardiovascular disease | 33% |
| Endocrine | Overweight and obese | N/A |
| | Type 2 diabetes mellitus | 42% |
| Oncological | Breast cancer | 20–30% |
| | Colon cancer | 30% |
| Musculoskeletal | Increased bone mineral density and decreased bone loss | N/A |

Data derived from [12]

training at least 4–7 days a week as it can reduce risk of falls as well as improve mobility and functional independence [13]. Of note, although these recommendations apply to adults ages 18–64, the study did not find evidence to support balance training in addition to the above [13].

**Skill-Building Exercise: Physical Activity Self-Assessment**

In order to assess your current level of physical activity and whether it meets the CPAG or PAGA guidelines, consider the following questions regarding types and intensities of activities, which are adapted from the International Physical Activity Questionnaire [14].

| **Types of physical activity** | **Duration** |
|---|---|
| In a usual week, how many days do you do aerobic activity? | days |
| On those days, how long do you spend doing this? | minutes/day |
| In a usual week, how many days do you strength-train? | days |
| On those days, how long do you spend doing this? | minutes/day |
| In a usual week, how many days do you stretch? | days |
| On those days, how long do you spend doing this? | minutes/day |
| **Intensities of physical activity** | **Duration** |
| In a usual week, how many days do you do light-intensity physical activity? | days |
| On those days, how long do you spend doing this? | minutes/day |
| In a usual week, how many days do you do moderate-intensity physical activity? | days |
| On those days, how long do you spend doing this? | minutes/day |
| In a usual week, how many days do you do vigorous-intensity physical activity? | days |
| On those days, how long do you spend doing this? | minutes/day |

**Key Points**

- Physical activity is "any bodily movement produced by skeletal muscles that results in energy expenditure."
- Health-enhancing physical activity should be added to achieve positive health outcomes.
- The North American physical activity guidelines are evidence-based recommendations to optimize particular physical health outcomes.
- At minimum, one can benefit from 150 minutes of physical activity per week, preferably aerobic at moderate to vigorous intensity.

## Physical Activity During Physician Training and Beyond

### Resident Physicians Falling Short of Guidelines

Now that the basics of physical activity are known, along with the fact that most adults are not meeting the physical activity guidelines, we will shift our focus more specifically to resident physicians. Despite the health literacy physicians are privileged to have from undergraduate studies and medical training, resident physicians are a population that struggle to engage in adequate physical activity. As physicians, the importance of physical activity as a means to promote health and wellness is well known, but there are barriers that make it difficult for residents to attend to this area of self-care.

Several studies have reported a concerning trend regarding physical activity in medicine. One study found that 84% of medical students and 84.8% of attending physicians met US physical activity guidelines with students reporting an average of 2.5–4 hours of exercise per week. In contrast, 73% of residents and 67.9% of fellows met the guidelines, although, overall, both

medical students and physicians participated in more physical activity than the general US population as only 43.5% of US adults were meeting the guidelines [15, 16]. Regardless, this prompts the question: what about postgraduate training makes it harder for resident physicians to achieve recommended levels of physical activity?

Another study focused on family medicine residents and attending physicians and found similar findings, albeit to a more extreme degree depending on inpatient or outpatient clinical rotations. While on inpatient rotations, none of the residents met US physical activity guidelines compared to 18.4% of attending physicians. While on outpatient or community rotations, only 6.9% of residents met the guidelines compared to 25% of attending physicians. These percentages are lower than those of the previously discussed study, and while the authors did not address the discrepancy explicitly, they caution against generalizability given their focus on one specialty at one location, a smaller sample size, and selection bias. In most cases, resident physicians wanted to be physically active and not being so contributed to further stress [17].

## Physical Activity as a Wellness Marker in Physicians

While there is an emphasis on promoting wellness during postgraduate medical education, the reality is that resident physicians continue to encounter challenges in this regard. The Canadian Medical Association (CMA) released the results of their 2018 National Physician Health Survey in which 60% of physicians indicated that they have "flourishing" mental health. Eighty-two percent of resident physicians reported having "high" resiliency; however, as a group they were more likely to report symptoms of burnout and depression as well as suicidal ideation. There is also a major transition from training to independent practice and newer attending physicians as a group were also more likely to report lower resiliency and higher burnout [18].

One of the indicators of physician health and wellness on this 2018 CMA survey is physical activity and while physicians completed questions on this topic, the results were not released with

the report. As much of the data thus far is American or specific to Canadian medical students, one wonders if Canadian resident physicians are also struggling to meet physical activity guidelines as seen with their counterparts. Resident Doctors of Canada (RDoC), a not-for-profit organization that represents Canadian residents on issues such as patient care, resident wellness, and medical education, has also released the results of their latest 2018 National Resident Survey. They found that 47% of residents believe their work schedule does not leave adequate time for personal life. Moreover, a large number of residents considered themselves to have negative work-life integration and the limiting factor was their work roles and hours [19].

## Case Vignette: "All Work and No Play"

Jake is a first-year internal medicine resident who was previously involved in fitness, personal training, and varsity sports during his undergraduate degree. While he did not have time for the latter two activities in medical school, he continued to participate in intramural sports. Through hockey he met a peer who he considered a role model, eventually joining him at the gym each morning to exercise. Jake adopted a routine of going to bed by 9:30 PM and waking up at 5:30 AM, and while it was difficult to establish at first, he could not imagine a better start to his day. He was getting enough activity without compromising his sleep, which he needed for long days of either work or study. He was feeling more alert, energized, and efficient during the day, no matter how stressful life seemed. Most of all, he was happy and this translated into how well he interacted with the healthcare team, his patients, and his peers.

Jake was ecstatic to be accepted in the internal medicine residency program. He felt his cohort was very similar to him – they worked hard and were motivated and involved. He was doing a range of inpatient and outpatient rotations around the city as well as 1 in 4 in-house on-call shifts. He took on teaching and leadership roles in his program that, while extra work, were rewarding. At some point, Jake realized that he was skipping his workouts more often on weekdays. He had always thought that he was fairly active during the workday but when reviewing his step counts

realized that in fact, he was actually not. In reality, he spent a lot of time sitting with patients, charting, teaching, and in meetings. He tried to make up for it by doing longer workouts on the weekend but this gradually became more difficult as well. He always felt tired and as though he had too much work to do and could not spare a moment for himself.

## Case Analysis

In Jake's case, he was used to daily physical activity and he had the freedom to maintain a high level of activity during medical school. Not only was this important to him, it also helped to make him a better provider and colleague. What happened during residency is that physical activity became less important than other responsibilities and his wellness routine fell to the wayside. Surely most of us can relate to being successful in implementing healthy behaviors at earlier levels of training, whether it was getting enough sleep, eating healthily, or being active. Yet, as soon as work responsibilities intensified, whether through clerkship or into residency, many of us scramble to maintain our habits or reluctantly sacrifice them. In Jake's case, he was at a crossroads where he had insight into his lack of physical activity and reasons for it (i.e., lack of time), but he was unsure of how to rectify it. If you were in his shoes, would you be likely to remake physical activity a priority in your schedule, or would you continue like Jake and hope you had more time in the future? Of course, it is not always a simple answer.

## Recognizing Unique Barriers to Physical Activity in Medicine

In a 2018 survey, the CMA asked about barriers that prevent physicians and residents from being more active, specifically inquiring as to whether time is a significant barrier [18]. Relatedly, a US study found that resident physicians worked an average of 60–69 hours per week and that there was an inverse relationship between the number of work hours per week and whether residents met physical activity guidelines; 85% of resident physicians

who worked less than 40 hours per week met the guidelines as compared to only 70% of those who worked more than 80 hours a week [15].

It is well known that resident physicians do not have much control over their schedules, and, in addition to clinical work, there are other mandatory activities such as research and teaching. Attending physicians also work variable hours, though they have greater control over the total number of hours worked per week, a privilege that is not always afforded to residents. Other barriers to physical activity that resident physicians identify are level of fatigue, lack of access to facilities, programs, or equipment, fear of injury, and disability, current injury, or illness. Lastly, it is interesting to note that it was more common for resident physicians to consider barriers to physical activity as insurmountable as opposed to their more optimistic attending physicians [17].

**Skill-Building Exercise: Identifying Common Barriers and Solutions**

If you are not meeting physical activity guidelines, it may be important for you to identify in the following table what barriers are unique to your life and how you can overcome them at individual and systemic levels.

| Barriers | Individual solutions | Systemic solutions |
|---|---|---|
| No time | | |
| No energy | | |
| No motivation | | |
| No support | | |
| Inconvenient | | |
| Too expensive | | |
| Fear of injury | | |
| Current injury, disability, or medical illness | | |
| Other | | |

**Key Points**

- Resident physicians are less likely than medical students and attending physicians to meet physical activity guidelines.
- Residents are more likely to feel they have negative work-life integration and not enough time for self-care.
- Resident physicians have unique barriers to achieving adequate physical activity, especially their lack of control over work hours.

## The Risks of Moving Less

### Being Sedentary at Baseline

As mentioned previously in this chapter, there can be harm in reducing physical activity in those who were once more active, as well as harm in continuing to be sedentary. Depending on the type of medicine one practices, one can spend a large proportion of time being sedentary, sitting to review charts and investigations, interviewing patients, or documenting. When resident physicians return home, there is a tendency to want to spend more time in physical relaxation, even in those with less active days, to eat, to study, to socialize, to watch media, and to sleep.

**Did You Know?**

*Research has found that sedentary behavior constitutes 55–65% of the general adult population's waking hours [20], and thinking back to our definition of METs, being sedentary is any activity below 1.5 METs such as sitting, reclining, or lying down [21].*

**Table 11.4** Known health risks of sedentary behavior by system [22]

| Health risks of sedentary behavior | |
|---|---|
| Mortality | All-cause mortality |
| | Premature mortality |
| | Cardiovascular disease mortality |
| Psychological | Depression |
| Neurological | Stroke |
| Cardiac | Hypertension |
| | Cardiovascular disease |
| Endocrine | Obesity |
| | Type 2 diabetes mellitus |
| Oncological | Colon cancer |
| Musculoskeletal | Osteoporosis |

Time spent being sedentary, as opposed to just low physical activity, has been shown to increase our risk of poor physical health outcomes and particularly chronic disease such as diabetes mellitus. Table 11.4 summarizes some of the major risks according to bodily system. A 2019 review found a strong dose-response association between being sedentary and all-cause mortality, cardiovascular disease mortality, and incident cardiovascular disease [22].

In addition to physical health outcomes, there is evidence to suggest that sedentary behavior can impact mental health. One study looked at the relationship between subjectively reported sedentary time, objectively measured sedentary time using accelerometers, and psychological distress among UK participants of the 2008 Health Survey. They found that those in the top 33% of both subjective and objective reports of sedentary time were at highest risk of reporting psychological distress. Specifically, subjective moderate-to vigorous-intensity physical activity and objective light-intensity physical activity were correlated with lower risk of distress. They concluded that sedentary time may put adults at risk of poor mental health [23], which is similar to other studies that have linked it to symptoms of anxiety, depression, and somatization [24].

## Being in Exercise Withdrawal

Beyond sedentary behavior, there has been interest in what happens when one decreases physical activity from usual standards in what researchers have termed "exercise withdrawal." Individuals who normally engage in physical activity regardless of intensity appear to be at risk of poor mental health if they are not able to maintain their previous levels of activity for whatever reason. In one study, young adults who were initially physically active were randomly assigned to a "no exercise" group, a "reduced moderate to vigorous physical activity" group, or to "normal activity" for 1 week. Their physical activity, anxiety, and depression scores were measured at baseline, after the intervention for intervention groups, and then 1 week following return to normal activity. Participants' depressive symptoms significantly increased if doing no exercise or reduced exercise, but once being able to resume their normal activity, symptoms dissipated and their mental status returned to baseline. Interestingly, participants did not have a significant change in anxiety in either intervention group [25]. Considering that these psychological changes happened over an acute withdrawal period of 1 week, one wonders what the long-term effects would be for previously active resident physicians.

## Case Vignette (Continued): "All Work and No Play"

Jake initially felt that giving up physical activity was not that significant. However, now in his second year as a senior internal medicine resident, he was starting to regret it. Jake had gained 10 pounds and while it did not look like much on his body, he was winded with even taking the stairs. He struggled to wake up, he was drinking more coffee, and he felt drained by the afternoon. Jake napped when he came home, and by the time he awoke, he had to stay up late to complete work. He felt he had over-committed himself as every role seemed arduous to him. Jake thought his performance was mediocre when compared to his peers who "did it all." Overall, he felt in a bad mood every

day, had little patience, and was easily irritated. An inpatient even complained to him one day, saying that Jake had no bedside manner.

Halfway through his second year, Jake received his worst evaluation. The staff felt that Jake had the skills and knowledge to succeed, but noted he was not performing like he used to. Most concerning was the fact that several colleagues and patients had complained about him. It is not that Jake made any medical errors, but he was unpleasant to work with. Concerned about this change, his staff suggested he speak to the counsellors at the postgraduate medicine office. Jake felt that this was unnecessary, but he went anyways, not wanting to appear difficult. He vented his frustrations with work, his schedule, and his apparent lack of control. The counsellor pointed out the challenges in caring for others when we are not caring for ourselves. Jake had heard this all before, but given the recent situation, this resonated with him more substantially.

Thinking back to when he felt his best, it was when he was sleeping, eating well, being active, and being social. Not only was activity good for him physically, but cognitively and psychologically as well. Moreover, he was considered easygoing and good-humored back when he was more active and healthier. Taking all of these reasons into account, he was determined to get back into physical activity and more healthy daily routines. Over several sessions, he worked with the counsellor to set goals and create an action plan. Rather than jumping into the deep end right away, and potentially being frustrated with the results, he decided to ease back into it. By the end of his second year, he felt satisfied with the progress he was making, he was better able to balance self-care with other work and personal responsibilities, and above all, he felt like himself again.

## Case Analysis (Continued)

In Jake's case, despite his insight into the fact that he was becoming less physically active, he continued on without making changes in hopes that his schedule would lighten up eventually. Physicians are vulnerable to falling into similar patterns of thinking at times, but often our schedules never just "lighten up" with-

out us reconsidering what is valued most in life and making it a priority in our schedules. In this case it took an objectively "bad" outcome (i.e., a concerning evaluation) not only to draw Jake's attention to the issue and how he felt, but also for others to notice him struggling and to offer support. Not only is it easy to let good habits slide when faced with more pressing tasks, but there can be risks that accompany giving up healthy behaviors such as physical activity. For Jake, he was not at his best physical, emotional, or mental health without an active lifestyle and so it was easy for him to find motivation to get back into routine. Similarly, if we feel we are struggling to be physically active, it is also important for us to think about why physical activity is valuable to us before we can consider making positive and sustainable change.

**Key Points**

- Being sedentary increases the risk of a variety of physical and mental health conditions, the latter including anxiety and depressive symptoms.
- Being in withdrawal from one's usual physical activity also increases mental health risk, particularly for the development of depressive symptoms.

## The Benefits of Moving More

### Physical Activity as Preventative Medicine

The main physical health benefits of activity are reflected in the North American physical activity guidelines as discussed previously. However, mental health benefits were excluded due to "weak" evidence at the time. Fortunately, there is now more evidence to support that adequate activity can positively affect cognitive and psychological outcomes for the general population as well as for resident physicians, as detailed below. Additionally, there is evidence to support that physically active physicians can

be role models for their patients, to the point where patients are more receptive to counselling and more likely to be successful in becoming more active, as discussed later in this chapter.

### Becoming Physiologically More Resilient

A normal physiological stress response is important to survival in the face of acute stressors, and as resident physicians, one can probably think of many day-to-day stressors in work roles. One knows that when we identify a threat, our body goes into a fight or flight response. Our pituitary gland secretes adrenocorticotropic hormone which stimulates the release of cortisol and adrenaline, with the former resulting in various physical effects such as increased heart rate, blood pressure, tunnel vision, and tensed muscles. Normally, one would exert some sort of effort (e.g., fight or flight) that is short-lasting, resulting in a dampening of our physiological stress response and our stress hormones returning to baseline levels. Unfortunately, one often activates the first part of the response which increases cortisol, and as we are exposed to chronic stress, our body does not have the opportunity to return to baseline. This puts us at risk of stress-related disorders including mental illness such as depression [26].

Studies have shown that physical activity can enhance resilience to the stress response by decreasing our hypothalamus-pituitary-adrenal axis response to acute stressors, in part by mediating stress hormones and thereby countering the harmful effects of chronic stress. One study found that trained athletes had lower cortisol levels as well as a dampened physiological (e.g., heart rate) and psychological response to psychosocial stress (e.g., public speaking) versus untrained participants [27]. There is still hope for those who are not elite athletes – as another study showed that if sedentary people participated in a structured treadmill exercise program for 6–12 weeks, then their stress response became significantly lower than prior to training [28]. Physical activity does not prevent us from experiencing a normal stress response in the first place, but rather, the response is far less in magnitude and recovery to baseline occurs more quickly with less adverse effects.

### Effect on Mental Health, Especially Mood

Considering the risk of psychological distress among resident physicians, it is important to consider what modifiable factors to target to support good mental health. In 2018, a study was published in *Lancet Psychiatry* that looked at the association between physical activity and mental health in a US sample of 1.2 million individuals from 2011 to 2015. Using data from the Behavioral Risk Factors Surveillance System Survey, they compared the days of self-reported poor mental health between those who exercised and those who did not. They found that those who exercised had significantly less poor mental health days, especially if they reported doing at least 45 minutes, 3–5 times weekly of either aerobics, gym activities, or team sports [29]. Not only does research show that all types of exercise are associated with less mental health burden, but also that there is evidence to support specific duration and frequency of activity [29].

Medical students are taught that physical activity can influence mood, to the extent of both preventing and treating depression. The 2018 CMA survey found that 34% of physicians screened positive for depression, and that this percentage far surpassed that of the general population [18]. While there is debate regarding the magnitude of effect, guidelines published by the Canadian Network for Mood and Anxiety Treatments recommend exercise as first-line treatment for major depressive disorder of mild to moderate severity [30]. A 2013 Cochrane review determined that exercise is moderately more effective than no therapy, exercise is no more effective than psychotherapy for reducing symptoms, and exercise is no more effective than antidepressants for reducing symptoms in milder episodes. Mechanisms proposed for the effectiveness of exercise include increase of neurotransmitters (e.g., serotonin, dopamine, norepinephrine) associated with depression, increased endorphins, increased neurotrophic factors, and reduced cortisol levels [31].

### Effect on Cognitive Performance

Numerous studies have shown that physical activity has a positive impact on our immediate and long-term cognitive performance at various ages. Research has determined that in order to learn, the

brain needs to grow, develop, and prune itself so that neurons can fire more efficiently. One factor that is implicated in learning is brain-derived neurotrophic factor (BDNF). BDNF is known to improve the function of neurons, stimulate growth, and protect against cell death [32].

**Did You Know?**

*One study found that 20–40 minutes of aerobic exercise increased serum BDNF levels by 32% in participants, whereas levels decreased by 13% in sedentary participants [33].*

Another study found that participants who completed high-intensity aerobic activity learned vocabulary words 20% faster than sedentary participants. Neurotrophic and catecholamine levels were measured before and after each intervention as well as after the learning activity. There were significant increases in dopamine, epinephrine, and BDNF for each intervention. An increase in BDNF was associated with better short-term learning and an increase in dopamine and epinephrine was associated with better intermediate and long-term learning, respectively [34]. Moreover, the hippocampus, which is the center of memory and learning, is also positively affected by physical activity. For example, after doing high-intensity physical activity, our ability to focus, concentrate, problem-solve, and remember things is improved [35]. Moreover, as one continues to engage in this type of physical activity, the hippocampus grows, which likely helps to explain the long-term effects on memory and learning [36].

## Effect on Quality of Life

Resident physicians often discuss quality of life as it relates to their choice of career early on and there is evidence to support that those who engage in physical activity enjoy good quality of life. One study looked at this relationship among resident physicians who participated in an exercise program. Initially, many residents were not meeting the US guidelines for physical activity. Residents who reported higher quality of life before the intervention main-

tained this throughout, and those who reported lower quality of life began to report higher values by the end of the study [37].

### Effect on Patient Care

Engaging in adequate physical activity has been proven to not only positively affect physicians, but also patients. Several studies have shown that physicians who participate in physical activity are not only more likely to discuss the topic with patients, but also to feel more confident in counseling and to prescribe it to patients as medicine, and that their patients are more likely to follow their recommendations [38, 39]. Unsurprisingly, research has demonstrated similar findings with the adoption of various healthy lifestyle behaviors, underlining the value of spending time in patient encounters talking about activity levels. This is one of many reasons why postgraduate medical education offices should be encouraging physical activity in resident physicians as it not only benefits them, but also their patients. Table 11.3 summarizes the results of a systematic review of physical activity and the primary prevention of health outcomes by the Canadian Society for Exercise Physiology [12].

**Key Points**

- Physical activity can mediate our physiological stress response, making us more resilient to acute and chronic stressors.
- Being active is associated with decreased risk of psychological distress in general and has a preventative and treatment effect on depression.
- Physical activity, through mediators such as brain-derived neurotrophic factor, can improve our learning, memory, and concentration.
- Being active is associated with higher quality of life in resident physicians and enhances the likelihood that it is included in health promotion for patients.

## Facilitating Physical Activity During Physician Training

### Physical Activity Strategies in Medicine

There is an awareness of barriers preventing resident physicians from being more physically active, but considering the potential benefits described previously, program, hospital, and clinic administrators should be implementing strategies to remove these barriers, including addressing culture, environment, and opportunity. In terms of culture, physicians are more likely to be physically active if peers have positive attitudes toward exercise; getting active with a partner is associated with increased exercise adherence [17].

### Workplace Strategies for Hospitals and Clinics

Given that physicians spend most "awake" time at work and are notably sedentary there, the CMA lists a variety of ways to increase physical activity in the workplace. Hospitals and clinics can provide features such as bicycle racks and showers should physicians choose to run, walk, or bike to work. Workplaces can have designated walking paths outside or through the hospital should people choose to go for a brisk walk before or after work or during nutrition breaks. It is not uncommon to see interdisciplinary colleagues speed walking at lunch! Also, workplaces can provide an exercise room with basic equipment, offer instructor-led classes of different intensities, or provide an outside gym membership – ideally for no fee or a nominal fee [40]. In many medical programs, there are opportunities to participate in intramural sports.

### Novel Interventions for Resident Physicians

There have also been creative efforts to create physical activity programs specifically for physicians. One study implemented a wellness program for neurosurgery staff and residents at the Medical University of South Carolina. Participants were provided

with wrist monitors, a healthy breakfast, fitness/nutrition/health lectures, 60 minutes of group moderate-intensity physical activity per week, and progressive goals throughout the program. Not only did researchers identify undiagnosed medical conditions at the start (e.g., hypertension), but 4 months into the program, 64% of participants felt it improved both their physical and mental health. Importantly, no participant felt that it interfered with their clinical duties, the program fostered a sense of camaraderie, and it further motivated staff and residents to pursue wellness goals [41]. Other studies have used formal programs and made them competitive and incentivized, playing to those traits common in many physicians. An example of a more informal and opportunistic strategy comes from Stanford University, where residents from one program frequent the exercise room during overnight call for a short, but effective use of time where they can move their bodies, de-stress, and reenergize [42].

**Key Point**

Programs and workplaces should implement physical activity strategies for resident physicians and other clinicians that promote physical activity via culture, environment, and opportunities.

## Creating an Action Plan to Move More Now

### Bridging the Intention-Behavior Gap

As useful and inspiring as it can be to read about physical activity and how it relates to our health as physicians, it is important to put goals into action. It can be difficult to transform our hope to be more active into a changed behavior, which is referred to in the literature as the "intention-behavior gap" [43]. Research has shown that "action planning," a self-regulatory technique, is a moderator of this gap as it applies to physical activity [44]. A

meta-analysis of 23 correlational and 21 experimental studies determined that action planning has a moderate effect on physical activity behavior, suggesting that it can be a valuable strategy [45]. In the next section, the authors will discuss what an action plan is, how to complete one, and how to review it.

## Creating a Simple but Comprehensive Action Plan

Action planning considers both quantity [46] and quality [47] of goals, and there is evidence to support that including both can result in improved physical activity behavior. These generally refer to:

(i) The number of action plans created
(ii) The specificity and instrumentality of parts within the action plan

Broken down further, specificity of our actions plans often refers to the following questions:

- What is the activity?
- Where will it take place?
- When will it happen?
- How long will it last?
- How intense will it be?
- With whom will I do this?

## The Importance of Reviewing the Action Plan

It is important that one uses tools to review action plans when one first creates them and to monitor progress so that if difficulties arise one can identify which aspects to change. In doing so, action plans become more robust and likely to achieve satisfactory results.

For example, one study examined the relationship between booster sessions delivered over the telephone and maintenance of self-regulated physical activity among cardiac and orthopedic

patients who completed standard rehabilitation. Among other outcomes, at 6 weeks and 6 months post-rehab, researchers assessed: (i) patients' action plans, (ii) sense of self-efficacy, and (iii) satisfaction – three factors known to positively affect the maintenance of healthy lifestyle behaviors. At the 6-week mark, patients were asked to identify their least successful action plan relating to physical activity using a tool developed by researchers. Patients were given the chance to identify barriers to physical activity that they missed initially when action planning or new ones that had arisen. As such, they were able to revise their action plans so that they could continue to make progress and be successful in maintaining physical activity levels [48].

## SMART Goal Setting in the Context of Physical Activity

A popular tool known as SMART goals helps facilitate healthy behavioral changes including increased physical activity. This method was first referenced by George Doran in 1981 in a paper called "There's a S.M.A.R.T. way to write management's goals and objectives." His intention was for those in leadership positions who followed this method to be better able to achieve positive outcomes, although use of this method has broad applicability [49]. This acronym generally stands for *s*pecific, *m*easurable, *a*ttainable, *r*ealistic, and *t*imely goals, although you may come across other subtleties in what each letter signifies. Table 11.5 summarizes common factors associated with SMART goals; the process itself is a useful approach to making and reviewing your physical activity action plans to set you up for success.

## Redefining What "Success" Is When Discussing Physical Activity

There is a propensity for physicians to be perfectionistic both in- and outside of work, and while this motivates them to excel in many areas, there is a risk that success can be viewed narrowly.

**Table 11.5** What are SMART goals?

| SMART goals are: | | |
|---|---|---|
| **S**pecific | What physical activity are you going to do? | What? Where? When? How long? How intense? With whom? (This is your *Action Plan*) |
| **M**easurable | How will you measure your personal progress? | By duration? Frequency? Distance? Repetitions? Weight? Circumference? |
| **A**ttainable | Is this a challenging, but reasonable activity goal? | This refers to making goals that reflect where you are now |
| **R**ealistic | Why is making this change relevant to you? | This refers to your motivation for making this change and if this change fits into your life |
| **T**imely | What is a realistic deadline to make this change? | This refers to days, times, and the overall period over which you expect to make the change |

Studies mentioned earlier in this chapter show that physicians tend to be more physically active than the general population; however, in reality, not every physician is very active at baseline [15, 16]. Physicians who are more sedentary should not be considered as "failing" by any means and "success" can be viewed as incorporating more activity regardless of type or intensity alone.

There are simple actions that can be incorporated into work to increase overall levels of activity whether it is parking farther from work, taking the stairs, using a standing or treadmill desk, or scheduling a walking meeting. Beyond work, activities such as walking the dog, doing yard or house work, or playing with children all count toward daily levels of physical activity and help further illustrate that we do not need to be elite athletes or fitness gurus to be "successful." If the overall goal is to be more physically active and there is flexibility in what this looks like, then we are likely to find satisfaction in all successes, even the small ones.

**Skill-Building Exercise: Action Planning**

Below is an example of an action plan template that you can work through for yourself. Remember that you can create several action plans to target different aspects of physical activity. For example, you might have one each for cardiovascular, strengthening, and flexibility-enhancing activities.

| Action plan | Cardiovascular activity | Strengthening activity | Flexibility activity |
|---|---|---|---|
| What? | | | |
| Where? | | | |
| When? | | | |
| How long? | | | |
| How intense? | | | |
| With whom? | | | |

**Skill-Building Exercise: SMART Goal Setting**

Below is an example of a SMART goal template that you can complete after your action plan. Make sure that each activity goal is specific, measurable, attainable, realistic, and timely. Again, this can be done for each type of activity you intend to start or increase.

| Goal setting | Cardiovascular activity | Strengthening activity | Flexibility activity |
|---|---|---|---|
| Specific? | | | |
| Measurable? | | | |
| Attainable? | | | |
| Realistic? | | | |
| Timely? | | | |

**Key Points**

- An action plan is an effective means to bridge the gap between intentions to be more active and actual physical activity. You can have more than one and be as detailed as possible.
- It is important to review your action plan at the start and at regular intervals to assess what is and is not working for you. You can use SMART goals as one tool to help you review.
- Setting realistic and incremental goals to gradually build self-efficacy and motivation can help to maintain healthy behavioral changes over the long term.

## Check Your Learning

### Case Study: "Running on empty"

#### Case Part I

Elena is 3 months into her first year as an orthopedic surgery resident in a program where the majority of rotations are spent on service in orthopedics. For the most part, she enjoys her day-to-day work as she gets to see a range of patients in clinic, in the OR, and on the unit, in addition to mandatory teaching. She also does 1 in 4 home call and depending on the hospital she is rotating through, some nights are fairly quiet after midnight and she is able to go home to sleep. Outside of work, she also teaches clinical skills for medical students who are currently learning about the musculoskeletal system and she is hoping to be involved in a research project. She considers herself fairly active and healthy, still going to the gym often, especially to lift weights, an activity she has been passionate about for years.

***Question. True or false:*** **Resident physicians typically have lower levels of physical activity compared to both medical students and staff physicians.**

A. **True**
B. **False**

**Answer: A ✓**
*Early on in her program, Elena is maintaining her usual level of physical activity; however, she can already see factors that put her at risk of inadequate activity. Several studies have replicated findings that resident physicians are less likely to meet national guidelines for physical activity than their junior and senior counterparts. Time is one of the most cited barriers by resident physicians, as they have more mandatory clinical and non-clinical duties than medical students, while also having little control over their work schedules compared to staff physicians.*

## Case Part II

Elena is now 6 months into the year and has just started her trauma rotation, a block that is known to be grueling for residents given the acuity of cases they see. She is now starting her workday earlier and staying longer into the evening with hardly any breaks during the day to eat or hydrate, let alone having a moment to relax. Moreover, "home" call is now more of a misnomer and she is spending her shifts in the hospital overnight actively working on cases. By the time she arrives home, she feels both mentally and physically depleted, often collapsing onto the couch to watch TV or surf the Internet. The most she feels capable of doing is to warm up a microwave dinner, try to study, and do some chores. She hardly thinks about exercising anymore.

***Question.*** **In considering Elena, which factors may be contributing to her overall health risk?**

A. **Exercise withdrawal**
B. **Low physical activity**

C. **Sedentary behavior**
D. **All of the above**

**Answer: D ✓**
*All three factors are contributing to Elena's current presentation. To start, she was a highly active individual, engaging in personal fitness of at least moderate intensity regularly. However, her routine fell to the wayside as she struggled to manage all of her responsibilities. Then, she developed a low baseline of physical activity, doing light intensity activity regularly at work (*e.g.*, walking between units) and at home (*e.g.*, housework) instead. However, as her exhaustion built, even this became difficult. She increased her sedentary behavior such as watching TV or going on the Internet to the detriment of other activities. All three factors are independently associated with negative physical, cognitive, and psychological health outcomes, explained in detail earlier in this chapter and also reflected in Elena's case.*

## Case Part III

Halfway through Elena's trauma rotation, she is finding it harder to focus, it is taking her longer to learn new procedural skills, and she feels she has lost her physical stamina. At home one night, her roommate comments that Elena is looking gaunt lately and asks if she has been unwell or if there are any other stressors. Elena brushes her roommate's comments off, stating that she has "typical" work stress but it is not any worse than her orthopedic peers, and she thinks she is handling it. Despite this, she steps on the weight scale the next morning and is shocked to see she has unintentionally lost 12 pounds. Thinking back over the past few months, she realizes that not only has she has been too tired to eat much at night, she often skips meals at work, and she also stopped weight lifting and has lost muscle mass.

***Question.*** **Which of the following positive outcomes are associated with physical activity?**

A. **Less anxiety**
B. **Lower risk of lung cancer**

C. **Improved cognitive performance**
D. **Enhanced work satisfaction**

**Answer: C ✓**
*Elena is struggling with cognitive performance on her trauma rotation, noting difficulties in focus, concentration, learning, and memory, all of which can greatly impact her work. If she could increase her current physical activity levels, she might benefit from improved cognitive performance. For example, higher intensity physical activity has been associated with short- and long-term cognitive improvements due to increases in neurotrophic factors (*e.g.*, BDNF), catecholamine levels (*e.g.*, dopamine, epinephrine), and an overall increase in the size of the hippocampus. As for the other answers, physical activity is associated with less depressive symptoms, lower risk of breast and colon cancers, and increased overall quality of life rather than less anxiety, lower risk of lung cancer, or enhanced work satisfaction, more specifically.*

## Case Part IV

Elena thinks back to earlier in the year when she was managing clinical and teaching duties while also investing more in her personal wellness and feeling happier and healthier. At the next academic day, she asks some of her peers how they manage to keep active, as many of them were highly active in medical school and continue to be so during residency. One signed up for the hospital gym that is fairly basic but has enough equipment for a good workout after work. Elena had no idea that there was a gym at the hospital, and that it was affordable to join. Her friend encourages her to sign up so they can work out together, help hold each other accountable, and motivate each other. Although difficult at first, exercising after work soon becomes routine for Elena, and not only is it fun to do with her friend, but she also feels physically stronger and healthier, and better able to handle daily stressors. She hopes to return to weight lifting one day, but feels this is a good alternative in the meantime.

***Question.*** **Which of the following are systemic strategies to encourage physical activity in resident physicians?**

A. **Telling residents to be more active outside of work**
B. **Providing psychoeducation about physical activity to residents**
C. **Residents joining a community gym or attending specialized classes**
D. **None of the above**

**Answer: D ✓**
*In this case, none of the above answers are considered systemic strategies. In fact, these strategies individualize the problem of low physical activity to resident physicians rather than addressing unique resident barriers and problem-solving at a systems level. Of course, there are many things one can do at an individual level to increase physical activity, but considering the benefits that it provides to resident physicians and their patients, it is worthwhile for programs and workplaces to change culture and provide opportunities for activity. Systemic strategies may include having an exercise room in the hospital, offering specialized classes with trainers, organizing intramural sports, and having running/walking groups. In Elena's case, once she realized that she had access to a staff gym for a nominal fee and that peers were using it regularly, it provided an opportunity to realistically incorporate physical activity into her busy daily schedule.*

**Key Takeaways**

- The hope is that in reading this chapter, individuals have been motivated to reflect on their current physical activity level, the value currently placed on it, and what, if any, changes to make.
- The authors have covered the basics of what physical activity is, including its types and intensities, and have also reviewed the North American physical activity guidelines and its evidence base for adults.

- The guidelines recommended participating in approximately 150 minutes of preferably aerobic activity at moderate intensity each week. In following these recommendations, there are a plethora of physical health benefits.
- Resident physicians are less likely to meet national physical activity guidelines for a variety of reasons, the most commonly cited barrier being lack of time due to long work hours with schedules that may be beyond their control. Work roles often involve and encourage sedentary behavior, and even those who started residency as physically active individuals find it difficult to maintain their usual levels of activity.
- Physical activity is a marker of physician wellness and that can have positive effects on cognitive and psychological outcomes, both highly relevant given heightened resident rates of burnout and depression in physicians.
- As a group, resident physicians, their staff, program director, and other administrators should continue to advocate for physical activity strategies to improve their workplace culture, environment, and opportunities, with a common goal to enhance resident resilience and well-being.
- Individual strategies such as action planning with SMART goals can help to incorporate regular physical activity into each week.

## Additional Resources

Additional resources about physical activity are illustrated in Table 11.6.

**Table 11.6** Selected physical activity resources

| Resources | Description |
|---|---|
| World Health Organization: "Physical activity" https://www.who.int/news-room/fact-sheets/detail/physical-activity | A webpage detailing physical activity definitions, global statistics, benefits of activity and risks of being sedentary, guidelines, strategies, and WHO responses (e.g., global recommendations, monitoring, action plan) |
| Canadian Society for Exercise Physiology (CSEP) https://csepguidelines.ca/ | Summarizes the Canadian Physical Activity Guidelines (CPAG) for major age groups and in certain populations, as well as linking to evidence-based resources that support them |
| Physical Activity Guidelines for Americans (PAGA) https://health.gov/paguidelines/default.aspx | Summarizes the US Physical Activity Guidelines for major age groups and populations, as well as the proven benefits of physical activity |
| Handbook for Canada's Physical Activity Guide to Healthy Active Living https://www.physicalactivityplan.org/resources/CPAG.pdf | A handbook created by CSEP and the Public Health Agency of Canada to provide education regarding physical activity, CPAG, and how to incorporate more physical activity into everyday life |
| ParticipACTION https://www.participaction.com/en-ca | A movement that advocates for making physical activity part of everyday life for Canadians through providing education, resources, and programs for individuals, workplaces, and communities |
| ParticipACTON App https://www.participaction.com/en-ca/programs/app | A free phone app that reflects current Canadian guidelines and behavior change science, as well as tracking, instructional articles and videos, and a rewards program to help people make and achieve their physical activity goals |
| Your local clinic or hospital website | Check online for employee wellness opportunities including classes, indoor exercise rooms and equipment, gym membership discounts, and outdoor opportunities such as walking or running groups |

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# 12 Healthy Lifestyle Behaviors: The Optimal Nutrition to Combat Burnout

Alexander Dufort, Emma Gregory, and Tricia Woo

## Introduction to Nutrition

The previous chapter discussed how physical activity directly impacts resident wellness and resilience. This section will begin by reviewing some basics of nutrition such as energy requirements and the major components of food (i.e., macronutrients and micronutrients). The authors will then provide an overview of American and Canadian dietary guidelines. Lastly, the chapter will touch upon what is known regarding the dietary habits of residents, medical students, and physicians, along with suggestions to help optimize nutrition.

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## The Basics of Nutrition

The topic of nutrition can feel overwhelming, due to the breadth of information available in both scientific and mainstream literature, as well as confusing, given evolving and sometimes conflicting recommendations. Given this, it is helpful to understand the scientific evidence of nutrition basics. For more detailed information, the reader is directed to section "Additional Resources" regarding additional resources at the end of this chapter.

When considering the potential health benefits and risks of food consumed, important factors to understand include caloric intake, food composition, (i.e., proteins, fats, or carbohydrates), as well as supply of vitamins and minerals. Various countries have published guidelines with recommendations for healthy eating, such as the US Dietary Guidelines for Americans (https://health.gov/dietaryguidelines/2015/guidelines/) and Canada's Dietary Guidelines (https://food-guide.canada.ca/en/guidelines/). Although the authors will discuss these recommendations later in greater detail, the general consensus is that a healthy diet involves regularly eating appropriately sized portions of nutrient dense food; both the quality (i.e., composition of food) as well as the quantity (i.e., caloric intake) matter.

## Quantity

In considering the quantity of food that one should eat, it is not usually helpful to quantify amounts by weight or volume. This is due to the fact that 100 g of celery is quite different than 100 g of chocolate in its nutritional content. Rather, the caloric value of food consumed is a more informative measure. A calorie represents a unit of energy and is equivalent to the energy required to raise 1 kg of water from 15 to 16 °C [1]. From a more practical viewpoint, calories represent the energy which our body extracts from food to power our various functions. Calories are derived from carbohydrates, fats, and proteins within our food and drink. Micronutrients, which consist of vitamins and minerals, do not provide calories [2].

As with automobiles, the amount of fuel needed to run a human body varies significantly from one individual to the next. Each individual has an Estimated Energy Requirement (EER) which is defined as the dietary energy intake required to maintain an energy balance [3]. If a person consumes more energy (i.e., more calories) than required, they will have a net positive energy balance with the excess contributing to weight gain. A person's EER depends on their age, sex, weight, height, genetic composition, and activity levels [2, 3]. For example, a triathlete has a larger EER as compared to a sedentary adult. Furthermore, as people age, their basal metabolic rate decreases as does their EER [3]. Various equations and tables exist to help individuals determine their estimated EER. Please see the "Additional Resources" section for more information on this topic and to calculate your own EER.

**Did You Know?**

*One pound of body fat is equivalent to 3500 calories. In other words, if you have an energy surplus of 500 calories per day, you will have gained 1 pound of fat after only 1 week [2].*

## Quality and Guidelines

Caloric intake is only one of the important metrics to consider, as the nutritional composition and overall quality of the food eaten also has a direct impact on health. The nutritional composition of food can be further broken down into macronutrients (i.e., carbohydrates, proteins, fats) and micronutrients (i.e., vitamins, minerals). Having a basic understanding of macro and micronutrients is important as these are the building blocks of the food that we consume and can affect our health in various ways [4]. Tables 12.1 and 12.2 provide a succinct overview of common and important nutrients, their sources, and their importance [2].

Many factors need to be considered regarding the composition of one's diet to promote optimal nutrition. Nutritional science, as a relatively new field of study, is rapidly changing such that there

**Table 12.1** Macronutrients [2]

| | | Sources |
|---|---|---|
| Carbohydrates | *Simple carbohydrates* – quickly broken down and a quick source of energy | Fruit, honey, maple syrup |
| | *Complex carbohydrates* – larger molecules that are broken down to simple carbohydrates, provide energy more slowly, less likely to be converted to fat | Starch (in pasta, bread), root vegetables (potatoes, sweet potatoes) |
| Fats | *Monosaturated* – plant derived fat | Peanut butter, olives, avocadoes |
| | *Polysaturated* – plant derived fat | Canola oil, sunflower oil |
| | *Saturated* – animal derived fat | Beef, full fat milk, butter, cheese |
| | *Trans fats* – human-made fat in commercially prepared food | Commercially baked cookies, donuts |

**Table 12.2** Micronutrients [2]

| | | Sources |
|---|---|---|
| Vitamins | *Vitamin A* – important for vision, immune function and skin health | Beef, dairy products, leafy greens |
| | *Vitamin B9* (folate) – important for cell division | Legumes, eggs, asparagus |
| | *Vitamin B12* – important for red blood cell formation and proper nervous system function | Fish, meat, clams, dairy products |
| | *Vitamin C* – important for creation of neurotransmitters and collagen | Citrus fruit, tomatoes |
| | *Vitamin D* – important for bone health, calcium absorption and immune function | Fortified milk, fish, egg yolks |
| | *Vitamin E* – important antioxidant | Vegetable oils, nuts, whole grains |
| | *Vitamin K* – important for synthesis of blood clotting proteins | Leafy green vegetables |

**Table 12.2** (continued)

| | | Sources |
|---|---|---|
| Electrolytes and minerals | *Calcium* – important for bone and teeth formation, muscle contraction and relaxation | Dairy, fortified cereal, leafy greens |
| | Magnesium – important to maintain healthy bones | Whole wheat, nuts, seeds |
| | *Zinc* – important to promote immunity | Oysters, Turkey dark meat |
| | *Iron* – important for motor and cognitive development | Lean meat, seafood, nuts, fortified grain products |
| | *Sodium* – important for fluid and electrolyte balance, nerve impulse transmission | Canned foods, fast food |
| | *Potassium* – important for fluid and electrolyte balance, muscle activity | Potatoes, various fruits and vegetables |

are still many ongoing discoveries and unknowns. Several countries have developed easy to access guidelines which provide simple, reasonable, and evidence-based suggestions. Canada's Food Guide, developed by Health Canada, recommends that vegetables, fruit, whole grains, and protein-rich foods (ideally plant-based proteins) be consumed [5]. The guidelines report that following such a diet has been associated with reduced risk of cardiovascular disease and associated risk factors such as hypertension and dyslipidemia. Health Canada also recommends unsaturated fats as preferred to saturated fats, as evidence suggests that preferential consumption of the former is associated with lower low-density lipoprotein (LDL), a form of cholesterol, and a reduced risk of cardiovascular disease. In addition, these guidelines recommend water as a regular beverage as opposed to other options such as juice or soft drinks. These recommendations are echoed by the US Department of Agriculture's Dietary Guidelines for Americans which propose similar dietary choices [4]. One easy to adopt strategy which is supported by both guidelines is the "plate method" (See Fig. 12.1). The "plate method" can be employed for any meal and recommends that:

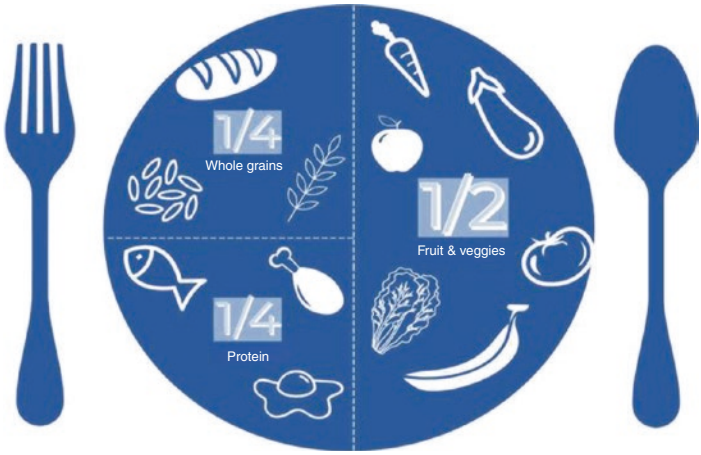


**Fig. 12.1** The plate method [2]

- ½ the plate consists of fruits and vegetables,
- ¼ of the plate consists of whole grains, and
- ¼ of the plate consists of protein [2].

Please see the additional resources (see section "Additional Resources") for more information and links to guidelines.

## What to Avoid?

Optimizing one's diet is as much about what is put in as it is about what is left out. There are many types of food which the guidelines suggest to avoid or minimize due to known problematic health effects.

Guidelines suggest that individuals limit the intake of processed foods, otherwise known as ultra-processed or highly processed products [5]. This group of "highly processed products" includes items such as sugary drinks, sugary breakfast cereals, and microwaveable meals. Canada's Food Guide notes that increased consumption of foods from this group has been associated with increased rates of obesity [5]. These products are associ-

ated with an increase in the amount of sodium, sugar, and saturated fats which can in turn lead to additional concerns such as an increased risk of hypertension and type 2 diabetes mellitus [6, 7]. Within this group of processed products are "processed meats" which include items such as hot dogs and beef jerky. Consumption of these food products has been associated with various forms of cancer and guidelines suggest that their intake be limited [8].

While many do not consider alcohol as a component of their diet, alcohol is a significant source of calories and has no nutritional value from a micro or macronutrient standpoint. In addition, alcohol is frequently co-ingested with sugary drinks as "mixers" which, as per Canada's Food Guide, contributes to its high caloric value. Lastly, alcohol use has been associated with a number of negative health outcomes such as injuries, liver disease, cardiovascular disease, cancer, and mental illness such as depression [9]. As such, alcohol intake is not considered part of a healthy diet and limited consumption is recommended. Guidelines regarding moderate and low risk drinking can be found on the websites of the Centers for Disease Control and Prevention (CDC) as well as the Canadian Centre on Substance Use and Addiction [10, 11]. Table 12.3 illustrates what constitutes low risk alcohol use for adults aged 65 and younger [10].

In addition to the effect of certain foods on one's health, the environment and where one eats can also have an impact. For example, communities with lack of access to supermarkets and fresh fruits and vegetables are associated with members having a higher BMI. Further, individuals who frequently eat out were found to have a significantly higher BMI as compared to individuals who cooked and ate at home [12]. In addition, Health Canada recommends home cooked meals and eating with other individuals [5]. Overall, the research suggests that avoiding restaurants and eating home cooked meals can be an important contributor to a healthy diet.

**Table 12.3** Low and moderate risk alcohol use for adults [10]

| Sex | Drinks per day | Drinks per week |
|---|---|---|
| Men | ≤3 drinks per day | ≤15 drinks per week |
| Women | ≤2 drinks per day | ≤10 drinks per week |

**Key Points**

- Each individual's daily energy requirement is different and can be easily calculated using various formulas provided in the "Additional Resources" section of this chapter [4, 5].
- Guidelines recommend a varied diet consisting of vegetables, fruits, whole grains, and proteins which are preferably plant-based and portioned according to the plate method [4, 5].
- Processed foods, sugary drinks, excess sodium, and alcohol are not considered part of a healthy diet [4, 5].

## Poor Nutrition and Medicine

In the previous section we discussed the components of an optimal diet in an ideal environment. Unfortunately, as residents enter training, a number of external and internal factors can impinge on the quality of their nutritional intake. These factors include increased stress, scarcity of time, extended periods of time at the workplace, and challenges with work-life integration. In this section we will examine what the literature tells us about the diets of those training to be doctors. As research specifically about resident diets is limited, data from medical students and staff physicians will be used to extrapolate information when appropriate.

In one study, an online survey was conducted to evaluate wellness behaviors of first year family medicine residents. The results revealed that only 25.2% of respondents consumed at least five servings of fruits and vegetables at least 5 days per week, well below dietary recommendations [13]. In a separate survey looking at the dietary habits of medical students, researchers identified that only 15.3% of learners followed dietary guidelines [14]. The quality of medical students' diets has also been shown to worsen over time, with decreased consumption of fruits and vegetables

and increased consumption of fast food as medical school progressed [15]. Examining the diets of staff physicians, a survey from California identified that 27% of respondents reported only occasionally eating breakfast or missing it all together [16]. From this same study, almost 40% of physicians reported eating red meat without restriction, which predicts a higher amount of saturated fat intake with its associated risks [16]. Resident diets are further worsened by the quantity and quality of free food (i.e., pizza lunches) often available during their training [17]. When comparing junior to senior physicians, one study identified the former as eating more fast food, less vegetables and fruits, and reduced frequency of breakfast [18]. Further, research has investigated the potentially negative effects of on-call shifts with regard to nutrition. In one study, 11 critical-care fellows were followed over the course of 35 on-call shifts. During these shifts, urinalyses were performed to assess hydration status. Approximately 21% of these measurements contained ketones and a specific gravity measurement suggestive of dehydration [19]. Lastly, while the important topic of substance misuse is beyond the scope of this chapter, several studies have examined rates of alcohol use within the resident population. In one study, resident physicians were more likely to have consumed alcohol within the past month as compared to high school graduates (87.6% vs 79.0%) [20]. In this same study 5% of residents were found to consume alcohol on a daily basis [20].

Physicians (and patients) do not usually simply choose to have a poor diet. Rather, there are numerous external factors that influence dietary choices. In one cross-sectional survey from the United Kingdom, physicians identified several barriers which interfered with healthy eating [21]. These barriers included a lack of breaks, heavy workload, inconvenient cafeteria operating hours, and lack of healthy options at the cafeteria. Regarding cafeteria operating hours, the study identified that hospitals often failed to provide access to meals for staff working overnight and on weekends. From this study, fewer than half of the physicians surveyed reported having regular meal breaks and only 12% felt supported by the National Health Service to engage in healthy eating behaviors [21]. In a Canadian study, residents were

surveyed regarding their dietary patterns while on call [22]. Barriers to healthy eating identified by residents included lack of time, poor access to food, and poor food quality. Overall, 81% of residents felt that their nutritional needs were not adequately met [22]. These results were also supported by an analysis of the quality of food offered at children's hospitals in California, which identified a large offering of high calorie impulse items (i.e., cookies) [23]. Lastly, physicians also identified the culture of medicine and the need to maintain professionalism standards as barriers to healthy eating. Specifically, physicians identified that they avoided taking breaks to avoid taking time away from treating ill patients [21].

Finally, research has also examined the link between a physician's diet and nutritional counseling provided to patients. Specifically, physicians and medical students who engage in healthy dietary practices are more likely to provide education and counseling to patients on this topic [24, 25]. Additionally, patients are more likely to be motivated to makes healthy changes if they receive counseling from a physician who engages in healthy lifestyle behaviors themself [26].

This chapter has provided a snapshot of the nutritional practices of resident physicians, medical students, and staff physicians. Despite the limitations of current evidence, this data does identify concerns and challenges regarding the diets of medical professionals. As nutrition is an essential component of wellness, more research is needed to better understand strategies to successfully promote and sustain optimal nutrition for healthcare providers themselves.

**Key Points**

- Research has identified numerous concerns regarding the diets of medical students, resident physicians, and staff physicians, such as poor adherence to dietary guidelines, skipping breakfast, and dehydration [14, 18, 19]

- External barriers such as lack of breaks, heavy workload, inconvenient cafeteria operating hours, and lack of healthy options influence dietary choices of physicians [21, 22].
- Patients are more likely to receive and be receptive to dietary counseling when provided by a physician who engages in healthy practices themself [26].

## The Impact of Suboptimal Nutrition

In the previous section, the chapter's authors discussed some general concepts of nutrition, components of a healthy diet, and reviewed the available research looking at resident diets. In this section, they discuss the outcomes, both physical and mental, of a suboptimal diet.

### Nutrition and Physical Health

The effects of poor nutrition on physical health are well studied and extensive. As per the World Health Organization, poor dietary habits have been associated with obesity and a number of nutrition-related chronic diseases. These diseases include type 2 diabetes mellitus, cardiovascular disease, cancer, osteoporosis, and dental disease [27]. The converse of these negative associations is also true. That is, healthy eating patterns are associated with reduced risk of cardiovascular disease, type 2 diabetes mellitus, certain types of cancers such as colorectal and postmenopausal breast cancers, and obesity. See the skill-building exercise below to learn more about the association between diet and chronic disease. Table 12.4 illustrates the main dietary components and their association with chronic disease.

In addition to the composition of one's diet, the timing of meals has also been shown to affect physical health. For example, eating meals at night has been associated with metabolic changes

**Table 12.4** Dietary components and chronic disease

| Dietary component | Association with chronic disease |
|---|---|
| Red meat and processed meat | Associated with increased risk of type 2 diabetes mellitus, stroke, and cardiovascular disease [28]. Lack of red meat can be associated with low iron and vitamin B12. |
| Nitrites and nitrosamine (e.g., from processed meats) | Evidence suggests an association with esophageal and gastric cancer [8] |
| Sugar | Associated with metabolic syndrome, type 2 diabetes mellitus, and cardiovascular disease [29] |
| Alcohol | Associated with injuries, liver disease, cardiovascular disease, cancer, and mental illness such as depression [9] |

leading to weight gain and disorders such as type 2 diabetes mellitus [30]. Sleep patterns may also be affected by dietary composition, as fat and sugar intake have been associated with a disrupted circadian rhythm [30, 31]. This interplay between sleep and diet is important to note given the regular shift and overnight work with which resident physicians are faced. Circadian rhythm and sleep will be discussed further in Chap. 13.

There are limited studies examining the physical effects of poor dietary intake specifically on physicians. In a cohort study of 85,078 male physicians, 44% were overweight or obese [32]. In a cohort study at American teaching hospitals, almost 50% of third-year medical and surgical residents were found to be overweight. Additionally, the proportion of overweight residents was shown to increase as residency progressed [33]. Similarly, resident physicians in the US military have been shown to gain 4 pounds on average over the course of a three-year training program [34]. While limited, this research does suggest that resident physicians may be at risk of preventable weight gain secondary to dietary habits.

## Nutrition and Cognition

Diet impacts cognitive functioning. For example, the Westernized diet which has a high proportion of saturated fats and refined sugars has been associated with impaired cognition. Cognitive

domains which appear to be particularly affected include memory, attention, executive function, and processing speed [35]. Another diet which has received considerable attention is the Mediterranean diet, especially, as it relates to the potential to decrease age-related cognitive decline and dementia. The diet itself consists primarily of vegetables, fruits, legumes, whole grains, nuts, fish, and olive oil [36]. A recent systematic review of observational studies identified that adherence to the Mediterranean diet was associated with improved cognitive functioning and reduced rates of cognitive decline [36]. Similar improvements in cognition have also been noted in randomized trials where the Mediterranean diet has been the intervention [37]. It is important to note that the quality of individual studies is heterogeneous given variability in samples sizes, use of standardized measurements, and study design. A number of studies have also examined the effects of breakfast on cognitive function. These studies identified that in malnourished children, skipping breakfast was associated with worsened cognitive performance [38]. While interesting, results from this pediatric study may not be representative of effects in the resident population. Research has examined whether or not the specific composition of breakfast had differential effects on cognition. Broadly, studies identified that breakfasts with a low glycemic load were associated with better cognition when looking at metrics such as memory and sustained attention [39]. Studies have also identified that eating a large lunch can be associated with worsened cognitive performance in the afternoon [40]. Overall, the composition and timing of our meals appear to have a significant effect on our cognition.

Hydration has been identified as another important factor when considering cognition. For example, a recent review identified that mild to moderate dehydration was associated with impairments in attention, immediate memory skills, and psychomotor function [41]. Dehydration has also been associated with subjective impairments on self-reported fatigue, diminished alertness and impaired concentration [42]. In addition, acute water consumption has been associated with improvements in visual sustained attention, short-term memory, reaction time, and mood [42].

New and emerging information continues to build our understanding of the relationship between oral intake and cognition in medical student and physician populations. In one study, the

cognitive effects of suboptimal nutrition were examined in a cross-sectional survey of 127 Japanese medical students. In this study, dietary behaviors such as skipping breakfast and irregular meals were associated with mental fatigue [43]. In another survey of 20 UK physicians, respondents reported having frequent difficulties accessing adequate nutrition and that this barrier was associated with tiredness, impaired concentration, and poor decision making [44]. However, it is important to note that this study was relatively small and limited to qualitative comments with an absence of objective measures.

Going beyond examination of the effects of poor nutrition on cognition in the physician population, several studies have looked at whether nutritional interventions could improve performance. In one study, a group of 20 physicians was observed during a normal working day as compared to a day where they received scheduled nutrition breaks. During the baseline and intervention periods, cognitive function was measured with a focus on reaction time, memory, attention, and visual information processing. The study identified that scheduled nutrition breaks with access to healthy options was associated with greater cognitive performance as compared to baseline [45]. The authors also identified that physicians' nutritional status, as measured through fluid intake and nutrient consumption, also improved in the intervention group [45]. While interesting, the quality of this study was limited by its small sample size and lack of randomization and other methodological factors. Overall, the association between diet and cognition is extremely relevant for physician trainees, especially given the need for high cognitive performance required by their work. Current evidence is limited, however, and more work is needed including larger and randomized trials.

## Nutrition and Mental Health

In addition to effects on cognition, research has also begun to identify that diet has an important effect on our mental health. Studies from the general population have identified an association between various diets and mental health outcomes [46].

Results from several adult studies are described in a recent meta-analysis which identified diets consisting of fruit, vegetables, fish, and whole grains as being associated with a reduced risk of depression [46]. In a second meta-analysis, moderate to high adherence to the Mediterranean diet (i.e., vegetables, fruits, legumes, whole grains, fish, and olive oil) was shown to be protective against depression [47]. When looking at the individual components of the Mediterranean diet, fatty acids such as those found in olive oil have also been shown to possibly reduce the risk of depression [48, 49]. As described in the next section, consumption of omega-3 fatty acids, which are commonly found in fish, has also been shown to reduce the likelihood of developing depression.

Research has also examined the effects of the Westernized diet. In one study, researchers identified higher rates of anxiety and depression in women who consumed this diet, even after controlling for multiple variables including education, age and socioeconomic status [50]. Similarly, a population-based study from Spain identified that increased fast food consumption was also independently associated with an increased risk of depression [51].

Unfortunately, there are limited studies which have specifically examined the impact of diet on physician mental health. In a survey of UK physicians, respondents reported emotional symptoms of irritability, frustration, and a sense of being emotionally drained when faced with poor access to nutrition [44]. Similar results were found in a survey of Canadian residents, with poor nutrition being associated with lower well-being scores and increased risk of burnout [22]. Further, in a survey of family medicine residents, higher rates of alcohol use were correlated with symptoms of burnout such as stress, emotional exhaustion, depersonalization, and depression [13]. Conversely, higher quality nutrition was associated with less depersonalization and greater life satisfaction in one study examining the lifestyle behaviors of pediatric residents [52]. Despite the limited research, appropriate nutrition is clearly recognized as an important factor for physician wellness. Physicians would benefit from systems-based approaches to support them in optimizing their nutrition. For example, in Canada, the Alberta Medical Association

Physician and Family Support Program has developed resources which help to promote and provide psychoeducation on wellness, including workplace nutrition [53].

**Did You Know?**

*Research has identified troubling effects of burnout and poor mental health in the physician population. In one cross-sectional survey of 7905 American surgeons, poor mental health, symptoms of burnout, and depression were all positively associated with medical errors [54]. While not directly examining the effects of poor diet on medical errors, results such as these may point to a possible link between dietary habits, mental health, and medical errors. Diet and safety will be discussed further in the next section.*

## Nutrition and Safety

The association between poor nutrition and safety is not as well defined as the link between sleep deprivation and motor vehicle accidents, as will be discussed in the next chapter (See Chap. 13). However, limited research suggests that mild hypoglycemia in patients with type 1 diabetes mellitus (<3.6 mmol/L [<65 mg/dL]) is associated with impaired driving due to a depressed central nervous system [55]. Further, a study of healthy volunteers identified that mild hypoglycemia was associated with impairments in fine motor skills, memory, and information processing [56]. The association between nutrition and safety has also been examined in the aerospace industry. In one study, pilots suffering from mild-moderate dehydration showed poorer flight performance and spatial cognition as compared to their hydrated counterparts [57]. Lastly, one study examined the effects of hypohydration (i.e., <25% of recommended fluid intake) on driving performance in healthy volunteers. The results were quite striking as hypohydration resulted in an increase in driving errors, similar to what would be observed in patient's suffering

from sleep deprivation or individuals with a blood alcohol content of 0.08% [58].

The evidence to support a correlation between poor nutrition and safety risk remains limited. Additionally, no research has been done to examine this question specifically in the resident physician population.

**Key Points**

- Dietary habits are associated with physical illness, cognitive performance, and mental health [27, 35, 50, 51].
- Dietary habits may also have implications regarding safety but further research is needed [55–58]
- Evidence suggests that resident physicians are at risk of negative health outcomes secondary to their dietary habits [32, 33, 44].

## Adopting Healthy Nutrition and Dietary Habits

In this chapter so far, the authors have established that resident physicians are at risk of poor dietary habits. In addition, poor diet has been associated with a number of adverse effects such as poor physical and mental health. In light of this, nutritional intake is an area requiring attention to promote physician and resident wellness. The following section will discuss strategies aimed at promoting healthy eating.

### General Strategies

Resident physicians are encouraged to follow the nutritional guidelines of their respective countries, such as Canada's Food Guide and the US Dietary Guidelines for Americans (See section "Additional Resources"). These guidelines are easy to read and

provide useful strategies which are evidenced informed. As discussed above, both guidelines recommend diets which consist predominantly of vegetables, fruits, whole grains, low fat dairy, and a variety of protein-rich foods (e.g., seafood, lean meat, legumes, soy). Both guidelines also recommend fresh and home cooked meals rather than eating out and processed/prepared foods. This is relevant to resident physicians given the limited healthy options offered at hospital cafeterias and vending machines. Residents are encouraged to take regular nutrition breaks throughout the day. As discussed above, having regular meals has been associated with improved cognitive performance [45]. While residents may be hesitant to take time away from patient care, they should be educated about the potential effects of poor nutritional intake on cognitive performance.

Dehydration, as discussed previously, can have significant impacts on cognitive performance. It is important for residents maintain hydration, even during the busiest of shifts, to avoid any deleterious effects. Recommended fluid intake varies between guidelines and depends on climate and activity levels. In the USA, the National Academies of Sciences and Engineering suggests that an adequate daily fluid intake for men is 3.7 L and for women is 2.7 L (Fig. 12.2) [59]. These values represent fluid intake from all sources, including both food and beverages. Residents can take note of their hydration status by monitoring for symptoms of dehydration as detailed in Table 12.5 [40].

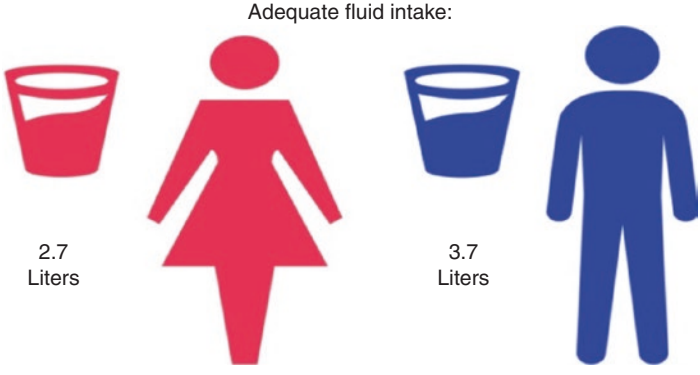


**Fig. 12.2** Recommended fluid intake [59]

**Table 12.5** Common signs of dehydration [40]

| |
|---|
| Dark colored urine |
| Decreased urine output |
| Dry mouth |
| Fatigue |
| Constipation |
| Light headedness |
| Headache |

Moreover, the authors of this chapter suggest some simple and practical tips that might help, including:

- Carrying a snack in your pocket

- Spending time in meal prep at home once per week or month and then freezing/storing it in portions
- Buying pre-cut/pre-washed veggies, fruits, or salads
- Using grocery delivery services, meal delivery, and meal preparation services
- Using fountains and water bottle filling stations in hospitals, universities, and clinics.

The previous section discussed how the composition and timing of meals can adversely affect circadian rhythm as well as increase the risk for certain metabolic disorders (See section "Nutrition and Physical Health"). As a result, previous studies have recommended that shift workers avoid eating large meals between midnight and 6:00 AM [30]. This suggestion could be applied to overnight call shifts where residents should avoid overindulging while awake overnight.

**Key Points**

- Home cooked meals are preferable to "convenience foods" which are often available in hospital cafeterias and vending machines [4, 5].

- Resident physicians should take regular nutrition breaks throughout the day [45].
- Resident physicians should monitor their hydration status and ensure regular fluid intake to prevent dehydration and its negative effects on performance [40, 58].

## Supplementation

In addition to healthy meals and snacks, there is a lot of hype about dietary supplementation and whether or not this is an evidence-based practice to optimize nutrition. Supplements may be consumed in the form of tablets, capsules, or liquids and are intended to supplement diets with one or more of the following ingredients: vitamins, minerals, fatty acids, fiber, plant matter, and bacteria (in the form of probiotics). Dietary supplements are a multibillion-dollar industry with thousands of products available to consumers. However, the benefits of many available supplements remain uncertain at best. The authors emphasize the importance of getting input from a family physician prior to supplementation. It is preferable to obtain these vitamins and minerals from dietary sources, when at all possible. The authors also refer the reader to Tables 12.1 and 12.2 for a list of good food sources for minerals and vitamins.

**Did You Know?**

*While certain dietary supplements may be beneficial, there are potential associated adverse effects. In the USA, one study estimated that on a yearly basis, 23,000 ED visits are secondary to the adverse effects of numerous dietary supplements [60]. As such, resident physicians should always speak with their family physician before starting supplements.*

## Is there an App for Optimal Nutrition?

As smartphone usage has expanded, so have the number of applications which focus on health, nutrition, and physical activity. Apps which are tailored towards nutrition generally focus on weight loss through calorie counting [61]. Calories can either be manually entered by the user or the phone's camera can scan a barcode to automatically enter the appropriate nutritional values. Apps can also provide the user with a daily calorie target which incorporates their weight, age, height, physical activity, and overall goal (weight gain vs. weight loss). In addition to calorie counting, these apps can also help users plan nutritious meals and view nutritional information [62]. Other features which are often present include reminders, social network integration, calendars, and journaling. Regarding the effectiveness of these apps, a recent meta-analysis looked at 12 studies which compared the efficacy of apps versus other weight loss options. The analysis identified that apps led to a significant reduction in weight and BMI as compared to other approaches such as counselling and provision of psychoeducational resources [63, 64]. Despite the evidence suggesting that apps may help with weight loss, there is a lack of research into whether or not these apps promote longstanding behavioral change and if they improve the overall quality of diets rather than simply reduce calories.

While there is still much to learn about the potential of nutrition-related apps, they may provide an easy to access resource for resident physicians wishing to optimize their diets, especially when it comes to weight loss or maintenance. Choosing an app can be difficult, given the fact that there were over 97,000 health-related apps in 2015 [64]. Current evidence is scarce for recommending one app over another. However, a number of systematic reviews have assessed the quality of multiple apps. Interested residents are encouraged to review this chapter's references and try an app to see if it helps them optimize their overall nutrition and health [61, 65].

## Changes at a Systems Level

While resident physicians may want to optimize their diets and follow suggestions that have been made in this chapter, they are still affected by multiple systemic and external barriers. As with other aspects of resident wellness, meaningful dietary change will only occur when there is a commitment from both individual residents and the system as a whole.

As discussed earlier in this chapter, a major barrier for resident physicians is the lack of healthy food options offered in hospitals as well as inconvenient cafeteria hours. Improvements could include the following [17, 21, 23]:

- Displaying nutritional information
- Reducing availability of high calorie items
- Limiting sugary beverages
- Improving cafeteria hours
- Installing vending machines offering healthy meal options

Further, increasing the accessibility of healthy options would also benefit allied healthcare workers, patients, and their families [17].

Professional organizations and medical schools have a vested interest in supporting the dietary habits of resident physicians. For example, the American Board of Pediatrics has amended their core competencies to include a focus on resident nutrition [66]. Similarly, an Emergency Medicine Resident Wellness Consensus Summit was held in 2017 leading to the development of a longitudinal curriculum for resident wellness. A major focus of this curriculum was self-care, which included a module on nutrition [67]. While these changes are a start, further efforts at a systems level are needed to assist residents when it comes to improving dietary habits.

## Check your Learning

### Case Study

Greg is a third-year surgical resident. He is currently on his sixth week of an acute care surgery rotation. This rotation is often considered one of the most difficult surgery rotations and Greg has

had trouble adapting to multiple stresses including long hours and having to manage critically unwell patients. Greg is starting to feel exhausted. He and his team typically start rounding on patients at 6:00 AM, which means that Greg has to be up, ready, and out of the house by 5:30 AM. To maximize his sleep, Greg usually skips a full breakfast and simply has a granola bar and a large coffee on the way to work. After rounds, Greg is off to the operating room where he is the first assist on any number of cases, which can last several hours at a time. During the surgeries, Greg often feels quite thirsty and hungry, with subsequent feelings of poor concentration. Even between cases, Greg has limited access to food and drink as he is tasked with completing necessary paperwork and managing post-operative care. If the opportunity arises, Greg will occasionally grab a chocolate bar and another coffee in between cases. Once the day's operations are over, Greg will finally attend to his hunger by heading to the cafeteria. In general, he is too tired when at home the night before to prepare a lunch to bring for himself. Greg often feels frustrated by the lack of choices available at the hospital's cafeteria and will usually settle for a burger, pizza, or fish and chips. After grabbing something to eat, Greg will head back to the ward to address any outstanding patient concerns, see new consults, and supervise medical students. Greg finds this portion of the day especially difficult as he is quite tired. Recently, Greg has noticed that he is deriving less satisfaction from his work and is having trouble empathizing with patients. Furthermore, he often feels irritated with questions from medical students and can be short in his answers. Arriving home, often after 19:00, Greg is frequently too tired to prepare a full meal. He often settles on ordering pizza or heating up a frozen dinner, though sometimes he will just snack before bed. He is often disappointed in himself for not cooking dinner, feeling that he should do better. In addition to feeling disappointed, Greg has felt slightly depressed over the last several months, with an overall lack of motivation to do anything pleasurable.

***Question 1.*** **As time on his rotation progresses, Greg starts to worry about the negative effects of a poor diet and how this could be affecting his health. Poor dietary habits have been associated with which of the following?**

A. **Impairments in cognition**
B. **Risk of physical illness**
C. **Depression and symptoms of burnout**
D. **All of the above**

**Answer: D ✓**
*Numerous studies have documented a positive association between poor dietary habits and all of the above outcomes.* (Please see sections "Nutrition and Physical Health", "Nutrition and Cognition", and "Nutrition and Mental Health" for a full discussion of these impacts*). If we look at Greg's diet specifically, we can identify several components which may be affecting his health in a negative manner. Firstly, Greg notes that he often skips breakfast in the morning, a habit which has been shown to be associated with worsened cognitive performance [38]. Further, Greg's fluid intake is low through the day and he is at risk of mild dehydration. As we discussed earlier, dehydration can be associated with impairments in attention, immediate memory skills, and psychomotor function [41]. Lastly, Greg appears to frequently consume frozen and fast food, components of the Westernized diet, which itself has been associated with impaired cognition, anxiety, and depression [35, 50]. It is also important to note that Greg's poor dietary habits have arisen in the context of multiple external barriers. In his case, these barriers include: long working hours, lack of breaks, lack of healthy options at the cafeteria, and professional responsibilities* (i.e., *patient care).*

***Question 2.*** **As the rotation continues, Greg's mental health worsens to the point of him missing work and isolating himself from friends and family. It is during this time that he fully recognizes and accepts that his diet and other lifestyle factors may be impacting his well-being. Greg is committed to change, though he is unsure about the best approach. What best describes the diet recommended for Greg based on Canadian and US guidelines?**

A. **Regular consumption of vegetables, fruit, whole grains, and proteins**
B. **Preferential consumption of refined grains and red meat**
C. **Regular consumption of fruits, vegetable, and saturated fats**
D. **A diet with a focus on dairy, fruits, and fish**

**Answer: A ✓**
*Both guidelines recommend regular consumption of vegetables, fruit, whole grains, and proteins. Unsaturated fats are preferable to saturated fats given the purported benefits on cholesterol [4, 5].*

***Question 3.*** **In addition to the acute effects of his diet, Greg is also concerned about how his dietary practices may affect his future health. Given his highly skilled work, Greg wants to adopt a diet which will preserve his cognition for as long as possible. Which diet could potentially protect Greg against future cognitive decline?**

A. **Atkins diet**
B. **Ketogenic diet**
C. **Mediterranean diet**
D. **Westernized diet**

**Answer: C ✓**
*A recent systematic review of observational studies identified that adherence to the Mediterranean diet was associated with improved cognitive functioning and reduced rates of cognitive decline [36]. The Westernized diet has been associated with negative physical, cognitive, and mental health outcomes. In addition to the effects on cognition, research has identified that high adherence to the Mediterranean diet was shown to be protective against depression [47]. As noted previously, the Mediterranean diet consists primarily of vegetables, fruits, legumes, whole grains, fish, and olive oil.*

**Key Takeaways**

- Individual energy requirements differ greatly for individuals and can be calculated using the EER equation (see "Additional Resources" below) [2].
- Guidelines recommend regular consumption of vegetables, fruits, whole grains, and proteins [4, 5].
- Limited evidence suggests that resident physicians may suffer from poor dietary habits [13, 17, 19].
- Dietary habits are associated with physical illness, cognitive performance, and mental health [27, 35, 50, 51].
- Residents should take regular nutrition breaks at work while also maintaining an adequate level of hydration [45, 58].
- Dietary supplementation may be appropriate for certain individuals in certain circumstances, though guidance from a healthcare professional is recommended before starting a supplement.
- Smartphone apps may provide useful tools for weight management [61–65].
- Systemic changes are needed to address barriers which negatively impact the nutritional health of resident and practicing physicians [17, 21, 23].

## Additional Resources

Table 12.6 enlisted selected dietary resources.

**Acknowledgment** The authors thank Naomi Dore Brown (assistant clinical professor (adjunct), McMaster University) for her expert advice in preparation of this chapter.

**Table 12.6** Selected dietary resources

| Selected dietary resources | Brief description |
|---|---|
| Canada's food guide https://food-guide.canada.ca/en/ | Provides access to resources for both consumers and clinicians. Lists the evidence used in the development of the guidelines |
| 2015–2020 Dietary guidelines for Americans https://health.gov/dietaryguidelines/2015/ | Provides access to the USDA's dietary guidelines |
| Choose my plate https://www.choosemyplate.gov/eathealthy/WhatIsMyPlate | Easy to digest description of healthy eating basics. In addition, a number of infographics are available to aid with patient teaching |
| Dudek SG. Nutrition essentials for nursing practice. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2010. | An easy to digest textbook on the basics of nutrition |
| Gerrior S, Juan W, Basiotis P. An easy approach to calculating estimated energy requirements. Prev Chronic Dis. 2006;3(4):A129. | A useful resource that describes how to calculate your EER |
| Unlock food https://www.unlockfood.ca/en/AboutUnlockFood.aspx | A website that is written and reviewed by Canadian dieticians (and thus evidence-based) and has info on nutrition throughout the lifespan as well as recipes, media, and interactive tools |

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# 13 Healthy Lifestyle Behaviors: Sleep to Remain Well Around the Clock

Ana Hategan and Tara Riddell

## About Sleep

### Normal Sleep Architecture

Life has become busier and more demanding than ever for health-care providers, including physicians. No matter how hectic our schedules may be, taking care of ourselves remains a priority so that we can remain well and function at our best as we provide care to others. In considering self-care, sleep is a core component as it is essential to maintaining human life. Let us take a further look at why sleep is so important to our overall health.

During the 24-hour cycle, the circadian clock regulates all body functions, including fluctuations in body temperature, blood pressure, heart rate, and various hormones [1, 2]. Most adults

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experience a major sleepiness peak between 2:00 and 4:00 AM and a minor peak between 1:00 and 3:00 PM, although there are individual variations [3].

Given the ethical limitations in researching human sleep deprivation, studies have been unable to show conclusive findings on how extended (i.e., more than a few days) sleep loss affects humans. However, research on sleep-deprived rats has shown that death has occurred usually in about 2–3 weeks of total sleep deprivation [4]. The cause of death may be precipitated by multiple factors including impaired immune function, possibly enhancing the rat's exposure to potentially life-threatening systemic infections [4, 5]. In humans, studies have shown that sleep deprivation, even in the short term, adversely affects stress responsivity, mood, cognition, and quality of life [5]. In the long term, it is believed to disrupt metabolism, and increase the risk of chronic disorders including cardiovascular disease, type 2 diabetes mellitus, and certain types of malignancy (e.g., colorectal cancer, prostate cancer) [5]. Although some findings suggest an association between sleep deprivation and maladaptive emotional regulation, more research is needed to further evaluate the effects of sleep deprivation on mood and behavior [6]. Moreover, acute sleep loss in some healthy adults has been demonstrated to cause a mood-elevating effect, commonly described as episodes of inappropriate euphoria and giddiness and oscillating periods of lopsided positive emotional reactivity to situations [7].

A great deal happens physiologically in the body while we sleep [5]. Once asleep, we cycle between non-REM and REM (rapid eye movement) sleep. Non-REM sleep occurs first, followed by a period of REM sleep. There are four phases of non-REM sleep, and each stage lasts between 5 and 15 minutes. In stage 1, referred to as light sleep, we transition from being awake to being asleep; in this stage, it is easy to wake up. In stage 2, we are still in light sleep, but now the heart rate slows and body temperature drops, preparing us for deep sleep [5]. In stages 3 and 4, collectively referred to as slow-wave sleep, we reach deep sleep, when it is harder to rouse. Stages 3 and 4 typically occur during the first one-third of the night [5]. During this period of slow-wave sleep, if external stimuli awake us, we would feel disoriented

for a few minutes, which is referred to as sleep inertia, or a state of impaired cognition upon awakening from deep sleep (detailed later in section "Sleep Inertia"). These deep stages of non-REM sleep are restorative, offering a time for the body to repair and strengthen tissues and the immune system [5]. Regarding cognitive development, non-REM sleep is associated with consolidation of declarative (explicit) memory, best described as "knowing that" (e.g., facts that need to be consciously remembered, such as dates) [8]. After all four subsequent phases, we reach REM sleep, in which our heart rate and respiration rate increases [5]. Studies have shown that REM sleep may be associated with consolidation of procedural memory, a nondeclarative (implicit) memory, best described as "knowing how" (e.g., performing certain tasks without conscious awareness of these previous experiences) [8]. REM sleep occurs approximately 90 minutes after falling asleep [9]. REM sleep takes up more of the cycle as the night goes on and is longest in the last one-third of the night [5]. Regardless of when we fall asleep, we typically tend to experience more non-REM sleep in the earlier hours of the night and more REM sleep in the later hours of the night (See Fig. 13.1). Dreams can occur anytime during sleep, but most vivid dreams occur during REM sleep,

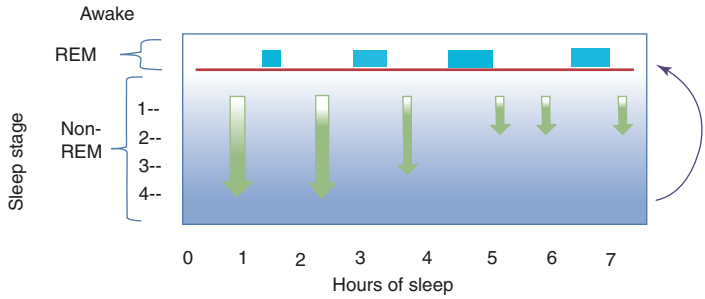


**Fig. 13.1** Nocturnal sleep architecture in humans [5, 9]. There are four stages of non-REM sleep. REM sleep typically occurs approximately 90 minutes after falling asleep. A full sleep cycle generally takes about 90 minutes (1–2 hours) and is normally repeated several times each night. In normal sleep, there is more non-REM sleep in the earlier hours of the night (light green arrows) and more REM sleep in the later hours of the night (aqua bars) [5, 9]

when the brain is most active. A full sleep cycle in humans generally takes about 90 minutes (1–2 hours) and is normally repeated several times each night [9].

With age, our sleep changes. As we get older, the duration of stages 1 and 2 increases such that we sleep more lightly, the duration of stages 3 and 4 decreases so that we have less deep sleep, and REM sleep and REM latency significantly decrease [10]. Overall, this means that we sleep less in total, less soundly, and with less of the restorative and reparative effects. Thus, while our need for sleep does not change as we age, it becomes increasingly more difficult to achieve this basic need. The US federal government's Healthy People 2020 initiative has established a goal of educating people on how to achieve adequate sleep on a regular basis [11]. According to the 2019 American Academy of Sleep Medicine guidelines, the definition of sufficient sleep during a 24-hour period for adults aged 18 and older is 7 or more hours [11].

## Alertness and Performance

Alertness is associated with performance and is determined by quantity of sleep, circadian effects, and sleep inertia [12].

### Quantity of Sleep

An appropriate quantity of sleep is needed for an individual to feel refreshed and capable of functioning without significant effort. However, a deficit in sleep quantity can be due to either an acute sleep loss or chronic partial sleep loss. Acute sleep loss occurs when an individual does not sleep for an extended period of time. Chronic partial sleep loss occurs when an individual persistently acquires less sleep than in a more sufficient sleep state (i.e., sufficient sleep is defined as 7 or more hours during a 24-hour period) [11]. Interestingly, chronic sleep deprivation can lead to a dose-dependent decrease in cognitive performance comparable to acute deprivation. In a randomized study of 48 healthy adults, those who slept less than 6 hours per night for 2 weeks had cognitive

abilities similar to individuals with one night of total sleep deprivation [13]. Subjects who slept less than 4 hours per night for 2 weeks had cognitive abilities similar to those who had 2 nights of total sleep deprivation [13].

### Circadian Effects

The circadian pacemaker is located in hypothalamus and regulates sleep-wake cycles. Research on diurnal variation in cognitive performance has demonstrated a performance peak that occurs during the day and a performance nadir that occurs in the early morning hours (3:00–5:00 AM) [14]. In this view, some studies suggest that there may an increased risk for errors among night shift workers across a range of professions [15, 16]. How these findings translate into the risk of actual clinical errors in medicine remains to be seen in future studies.

### Sleep Inertia

Sleep inertia is defined as the state of sleepiness and impaired cognition, including disorientation, commonly experienced upon awakening from deep sleep [17]. Sleep inertia increases with the depth of prior sleep. Cognitive performance upon awakening from deep sleep is worse than performance during subsequent sleep deprivation [18]. Research has reported severe performance impairment within the first 3 minutes of waking from sleep, and lasting up to 10 minutes thereafter, although noticeable effects on performance can persist for 2 hours or longer [12, 17, 18]. In a study of nine healthy volunteers, cognitive performance measured upon awakening from sleep was worse than performance measured at all times with 26 hours of sleep deprivation [18]. Although not performed in an operational setting, the cognitive skills tested in that study included processing speed, short-term memory, counting skills, and number, fact, and lexical retrieval (i.e., lexical retrieval is the process of getting from a concept to a spoken word) [18].

As such, the impact of sleep inertia is particularly relevant to resident physicians who are frequently required to complete complex cognitive tasks immediately after waking at night on call

[18]. (See more at section "Sleep Deprivation and Mental/Emotional Functioning" on cognitive performance and sleep deprivation.) Patient assessment can require prompt, high-pressure decision-making. A physician can be expected to quickly and accurately order diagnostic tests and medications and perform invasive procedures that require significant concentration and skill. Although many of the tasks that physicians are required to do on call and during the night are not always in high-pressure decision-making situations, the daily practice of medicine requires physicians to be optimally alert.

**Key Points**

- Cognitive performance is typically suboptimal immediately upon awakening because of sleep inertia.
- The effects of sleep inertia are most apparent during the initial 10 minutes upon awakening and may take hours to completely disappear.
- Sleep inertia is most prominent in individuals with sleep deprivation and particularly when awakening occurs during performance nadir (i.e., during the early morning hours) [18].

## Sleep Deprivation in Medicine

Sleep deprivation may be considered an adverse hallmark of medical training, with the problem likely being worse in some specialties and stages of training than others [19, 20]. In fact, some research has shown that junior physicians working a 34-hour shift can commit 460% more diagnostic mistakes than when well rested, and 36% more serious medical errors than those working less than 16 hours [21]. Senior physicians are similarly at increased risk of making medical errors. One study found that a senior attending surgeon who has slept less than 6 hours the night

before surgery is 170% more likely to make a surgical error compared to when he or she has slept adequately [21].

**Did You Know?**

*The Canadian Medical Association's 2018 National Physician Health Survey has shown that* [22]

- *Physicians averaged 6.7 hours of sleep per night; resident physicians reported fewer hours of sleep compared to practicing physicians (6.41* vs. *6.76 hours).*
- *Physicians working in hospitals had less sleep than those in private practice.*
- *Physicians in practice for 31 or more years reported getting more sleep compared to all categories of physicians with less than 20 years of practice.*

Furthermore, a growing body of literature has demonstrated that extended work hours may be associated with a negative impact on the medical trainee's well-being and education, as well as patient care, although the results have been conflicting [23]. Because of concerns for patient safety, in North America there have been minimum standards for duty hours instituted by the Accreditation Council for Graduate Medical Education and the Royal College of Physicians and Surgeons of Canada [24, 25]. These standards were based on findings about the sleep deprivation effects of extended shifts on resident physician performance, and subsequently required significant schedule restructuring; however, the schedule restructuring has proven to produce only a modest improvement in sleep duration for resident physicians [26]. Nevertheless, the relationship between one's work schedule, the degree of impairment, and patient outcomes still remains unclear due to the heterogeneity of study protocols, schedules, and medical environments [23]. Many of these studies have significant limitations and should be interpreted with caution. Further research is needed to clarify duty hours that optimize patient outcomes, as well as resident education and well-being. Until then, it is recommended that current accreditation program regulations be

followed. Table 13.1 highlights a summary of the accreditation program requirements and guidelines for resident physicians in the USA and Canada [25, 27]. In recent years, "strategic napping," especially after 16 hours of continuous duty and between

**Table 13.1** North American guidelines regarding resident physician work hours

| ACGME | RCPSC |
|---|---|
| Duty hours must be limited to 80 hours per week, averaged over a 4-week period, inclusive of all in-house clinical and educational activities, clinical work done from home, and all moonlighting. | Duty hours are a key component of medicine and medical training. |
| Residents must have at least 14 hours free of clinical work and education after 24 hours of in-house call. | Residents are not solely responsible to provide 24/7 patient care; rather, this is to be shared collectively among a team of healthcare providers. |
| Residents must be scheduled for a minimum of 1 day in 7 free of clinical work and education (when averaged over 4 weeks); at-home call cannot be assigned on these free days. | Efforts should be undertaken to avoid duty periods of more than 24 hours without a period of restorative sleep. |
| Residents must not be assigned additional clinical and educational work periods after 24 hours of continuous scheduled clinical assignments. | Resident duty hours may only be one factor among many which contribute to resident fatigue, safety concerns, and suboptimal functioning. |
| Residents must not be scheduled for in-house call more frequently than every third night (when averaged over a 4-week period). | Residency programs and specialties vary largely and so there is no one-size-fits-all approach to duty hours. Each training program may need to consider what is best to optimize the educational experience and well-being of their residents, as well as provide safe and efficient patient care. |

Adapted from the 2019 RCPSC 5 Key Principles for Resident Duty Hours [25] and 2017 ACGME Common Program Requirements [27]. Note: *ACGME* Accreditation Council for Graduate Medical Education, *RCPSC* Royal College of Physicians and Surgeons of Canada

the hours of 10:00 PM and 8:00 AM, was suggested by the Accreditation Council for Graduate Medical Education (ACGME) after determining that the original Institute of Medicine (IOM) committee's recommendation of an uninterrupted 5-hour sleep period was "unworkable" [28]. When fatigue sets in, a quick nap can help restore your psychological and physical stamina [29]. However, keep in mind that getting enough sleep on a regular basis is the best way to stay alert and optimize your cognitive performance.

**Key Points**

- The IOM initially recommended that resident shifts longer than 16 hours include an uninterrupted 5-hour sleep period. However, the ACGME task force concluded that this sleep period was unworkable, and instead recommended "strategic napping" during long continuous shifts [28].
- The National Sleep Foundation recommends that a short nap of about 20 minutes can help to improve alertness, performance, and mood; however, note that naps do not necessarily make up for inadequate or poor quality of nocturnal sleep [29].

## The Impact of Sleep Deprivation

### Sleep Deprivation and Safety Risks

As discussed previously, reduced levels of alertness during and after on-call nights need to be addressed and mitigated. Understanding the potential impact of sleep deprivation and fatigue on physician performance and safety and using this knowledge to optimize shift schedules can reduce risks to both physicians and patients. Resident physicians typically work shifts of 24–36 hours while on minimal sleep. Consequently, this can place

**Table 13.2** Sleep deprivation and potential risks to the resident physician and to patient safety [30, 31]

| Resident physician safety | Patient safety |
|---|---|
| Motor vehicle accidents | Handover errors |
| Percutaneous injuries | Medical errors |
| Psychological distress and mental health issues, including substance use | Patient morbidity and mortality |

the physician and their patients at risk in several ways as summarized in Table 13.2 [30, 31]. Although sleep deprivation can result in excessive sleepiness, its contribution to vehicle crash risk in the general population remains uncertain. A study by Gottlieb et al. has shown that sleep deficiency in adults, either due to insufficient sleep (sleep duration of less than 7 hours) or due to sleep apnea, was associated with motor vehicle crashes in the general population, independent of self-reported excessive sleepiness [31]. However, further studies are needed to explicitly elucidate the adverse outcomes correlated with shift work and sleep deprivation and, more specifically, whether there is any mutual causality.

## Sleep Deprivation and Mental/Emotional Functioning

Lack of sleep is often associated with increased risk of mood disorders, anxiety, and difficulty coping with negative stimuli and regulating one's emotions. These effects are likely related to hypothesized changes in functional connectivity and messaging among the amygdala, anterior cingulate cortex, and prefrontal cortex [32]. Cognitive functions are also significantly affected by sleep deprivation and include psychomotor and cognitive speed, working memory, vigilance and executive attention, and higher cognitive abilities (e.g., cognitive control, planning capacity, ethical behavior, risk taking, leadership style) [33]. Some of the effects on higher cognitive changes may be explained from a biological perspective, as sleep deprivation appears to impair cere-

**Table 13.3** The effects of sleep deprivation on cognitive functioning [33, 35, 36]

| Cognitive function | How sleep deprivation interferes |
|---|---|
| Attention | Attention declines in dose-dependent fashion with sleep loss (i.e., more time sleep deprived = worse attention)<br>Ability to maintain one's attention becomes more variable and can impact productivity and task performance |
| Memory | Increased difficulty receiving and retaining new information<br>Sleep is key to learning and memory consolidation; however, a sleep deficit can impair ability to recall information previously learned or to master a new skill |
| Processing speed and response | Processing speed slows, as does reaction time for and accuracy of psychomotor responses |
| Executive functioning | Decline in cognitive flexibility, impairing decision-making and problem-solving<br>Decline in inhibitory control, leading to impulsivity, risk-taking, impaired judgment, and heightened emotional reactions<br>Poor insight into performance limitations or deficits |

bral function by reduced glucose metabolic activity in the prefrontal and parietal cortices, secondary sensory processing areas, and thalamic areas [33]. The dorsolateral prefrontal cortex seems to be the area of self-restraint; self-control thus appears susceptible to glucose metabolism [34]. This may be important as self-control is an essential component of decision-making processes. Table 13.3 summarizes the effects of sleep deprivation on cognitive functioning [33, 35, 36].

## Sleep Deprivation and Disease

While many are aware of the risks that sleep deprivation can pose with regard to our safety, mood, and cognitive functioning, it is also important to recognize that sleep deprivation can have an impact on

morbidity and mortality. Sleep is crucial to various homeostatic processes including the functioning of our autonomic nervous system, as well as regulating hormone production and release. In considering this, failure to achieve adequate sleep can disrupt these natural cycles, leading to dysfunction within these bodily systems, which over time can place us at risk of cardiovascular, immunological, and metabolic diseases [37]. Table 13.4 summarizes the common effects of sleep deprivation on various bodily systems, and how this can result in medical problems [37–39].

**Key Points**

- In general, sleep deprivation leads to decline in cognitive abilities, impaired motor skills, and also altered mood.
- There is increasing evidence that sleep deprivation has long-term health consequences such as increased cardiovascular mortality, obesity, and diabetes mellitus.
- Sleep-deprived resident physicians are at increased risk for motor vehicle crashes and percutaneous injuries, whereas their patients are at heightened risk for being subject to medical errors.

**Did You Know?**

*Literature suggests that if we stay awake for longer than 18 hours, our reaction speed, cognitive speed, short-term and long-term memory, ability to concentrate and make decisions, and spatial orientation all start to decline. If we reduce our sleep to 5–6 hours per night for several days in a row, the accumulated sleep deficit may further magnify these negative effects* [31].

**Table 13.4** The effects of sleep deprivation on various bodily systems and resulting medical problems [37–39]

| Physical health problem | How sleep deprivation interferes |
|---|---|
| Weight gain and obesity | Slows metabolism, reduces leptin (a hormone that signals satiety or a sense of fullness), and increases ghrelin (a hormone that signals hunger) leading to increased appetite and oral intake [37] |
| Impaired glycemic control and diabetes mellitus | Leads to elevations in thyroid hormone, cortisol, and norepinephrine which can impact carbohydrate metabolism and promote insulin resistance [37] |
| Hypertension, heart disease, and stroke | Activates the hypothalamus-pituitary-adrenal axis, promoting increased production and release of stress hormones including cortisol [37]<br>Increases peripheral resistance, sympathetic outflow to the heart, and alters baroreflex sensitivity and set point [37] |
| Weakened immune system and infection | Decreases production and release of protective cytokine as well as impairs the functioning of immune cells and antibodies that help to fight off illness and infection [38] |
| Reduced life expectancy | Short sleep (<6–7 hours per night) has been associated with increased all-cause mortality [39]<br>Different hypothesized pathways for this although most frequently thought to be attributed to the various cardiovascular, metabolic, and inflammatory processes sleep loss disturbs [39] |

## Effects of Caffeine on Sleep Quality and Daytime Functioning

Research has shown that performance deficits caused by sleep deprivation may be reversed by caffeine consumption during the subsequent daytime period [40]. Caffeine (1,3,7-trimethylxanthine) acts primarily on A1 and A2A adenosine receptors, which in turn are related to brain functions associated with arousal, sleep, and

cognition. Caffeine is quickly absorbed by the stomach and small intestine, with peak plasma concentrations occurring in the first 30 minutes, requiring about 45 minutes to achieve 99% bioavailability [41]. Majority of the caffeine metabolism is through the CYP1A2 (phase I oxidation reactions), with only a minimal amount being excreted by urine [41]. Caffeine has a half-life ranging from 2 to 10 hours, depending on endogenous and exogenous factors [40]. Caffeine's short half-life may allow a strategic increase in daytime functioning; however, it should be noted that the caffeine's residual effects can last several hours putting our sleep at risk. Daytime caffeine consumption causes a decrease in the excretion of the main metabolite of melatonin (6-sulfatoxymelatonin) during the subsequent night, which is one of the mechanisms by which sleep is disrupted [42].

While caffeine ingestion has been shown to have positive impact on cognitive function, on the other hand it can contribute to sleep deprivation, which impairs performance, leading to deficits in attention, alertness, speed of cognitive processing, and psychomotor responses. Studies have demonstrated that a nocturnal sleep deficit of only 90 minutes can lead to a one-third reduction of daytime objective alertness [40]. It remains unclear how exactly the purported psychoactive benefits of caffeine consumption impact the sleep-deprivation performance deficits and the subsequent quality and quantity of nighttime rest (See Fig. 13.2). Further research is required to elucidate the complexities of the relationship among caffeine, sleep, and daytime functioning.

**Did You Know?**

*Studies have shown that nicotine and its metabolic inductive effects can significantly increase caffeine metabolism and thus a higher caffeine intake may be seen in tobacco smokers (up to 4 times the caffeine intake) compared to non-smokers in order to get similar plasma caffeine concentrations* [43].


**Fig. 13.2** Benefits and harms of caffeine consumption on sleep and daytime performance

## Recovering from Sleep Loss: How to Repay the "Sleep Debt"

Patients are ill and need help at all hours. Therefore, the practice of medicine has to be around the clock. Nevertheless, modifications may be necessary in order to mitigate against sleep loss. Imagine resident physician wellness as analogous to a wellness bank. Using this analogy, we can consider our wellness as a bank account, so that we should aim for our account to carry a *positive* balance. Thus, we need to reflect on what constitutes bank *deposits* (e.g., what makes us feel well and healthy?), and what leads to bank *withdrawals* (e.g., what causes us to feel distressed?). If nocturnal sleep were a bank account, many of us in medicine would exceed the maximum daily debit transaction limit or be in deep credit card debt. The trouble is that the greater the "sleep debt," the less capable we are of recognizing the sleep deficit. Perhaps we can hardly recall what it is like to be fully rested [33]. Experimental studies on chronic sleep deprivation, which mod-

eled the sleep loss experienced by individuals with sleep fragmentation and sleep limitation due to lifestyle and disorders, demonstrated that cognitive deficits accumulate over time to severe levels and without full awareness by the affected individual [33]. As the sleep debt mounts, the health consequences increase, putting us at increasing risk for weight gain, diabetes mellitus, heart disease, stroke, or cognitive impairment. Therefore, adequate sleep is just as important for health as diet and physical exercise. Some strategies and tips on how to settle our "sleep debt" are illustrated below.

- *Long-term debt.* If you were chronically deprived of sleep for years, it may take several weeks to recuperate from this deficit. For example, some tips may include planning a vacation with fewer or no obligations in your schedule. While away, sleep every night until you awake naturally the following morning (turn off the alarm clock!). By the end, you may be getting about the amount you regularly need to wake feeling refreshed.
  - *Avoid relapsing into a new sleep debt cycle:* Once you have determined how much sleep you need, factor it into your daily schedule. Try to go to bed and get up at the same time every day (at least, when not on call). If need be, use weekends or time off from work to compensate for lost sleep.
- *Short-term debt.* If you missed 10 hours of nocturnal sleep during the week, consider sleeping an additional 3–4 hours on the weekend, and 1–2 hours more per night the following week until you have completely repaid the debt.
  - Think about ways to incorporate naps into your busy life and work schedules, if feasible. As sleep deprivation and fatigue are common in residency training, especially given late and overnight shifts, literature has shown that the most helpful strategies to minimize disruptions to your sleep regimen and circadian rhythm include limiting your sleep after call to noon instead of all day, and "sleep anchoring" where you have naps that aim to overlap with your normal hours of sleep [44]. A study examined the benefits of naps of various lengths (5, 10, 20, and 30 minutes) versus no naps [45]. The

results showed that a 10-minute nap produced the most benefit in terms of reduced sleepiness and fatigue, and improved cognitive performance, with improvements lasting up to 155 minutes after the nap. A 30-minute nap or longer is more likely to be accompanied by sleep inertia (i.e., impaired alertness and performance immediately after napping) [45].

  - Table 13.5 provides a few tips for the resident physician practicing sleep discipline strategies both during and after a call shift [47]. During an active call shift, if workload permits, a limited nap of 10–20 minutes can be restorative and allow more alertness and quicker responsiveness on call than a longer period of sleep and deeper sleep stages, which are associated with disruption and grogginess. Setting the alarm for sleeping up to about 20 minutes may allow better functioning until you can experience a longer, uninterrupted period of sleep on your post-call day. After the call shift, wearing sunglasses outside or using a sleep mask for daytime sleeping minimizes exposure to bright sunlight, which activates alertness. Aim to sleep for up to 4 hours, and as soon as possible after the call is completed. Sleeping longer than 4 hours may impact your next night's sleep.

- *Sleep hygiene.* Use sleep hygiene tactics for rapidly rotating shifts. Some key elements of nonpharmacological approaches to sleep deprivation are provided in Table 13.6 [47, 48].

**Table 13.5** Strategies for sleep discipline during on call and post call [47]

| On call | Post call |
|---|---|
| Take limited naps (approximately 20 minutes) | Wear sunglasses outside |
| | Use a sleep mask and/or room darkening blinds for daytime sleeping |
| | Use stress reduction techniques to induce daytime sleep (e.g., relaxation tapes, white noise machines, self-hypnosis) |
| | Sleep as soon as possible after call is completed |
| | Sleep for up to 4 hours |

**Table 13.6** Elements of sleep hygiene prior to a sleep period [47, 48]

| |
|---|
| Use a room that is quiet and comfortable |
| Avoid having visible time cues in the room |
| Use an alarm clock |
| Avoid stimulating activities prior to a sleep period (e.g., screen-based activity) |
| Decrease daytime napping |
| Avoid caffeine at least 6 hours prior to a sleep period |
| Avoid alcohol and nicotine prior to a sleep period |
| Avoid eating or eat very lightly prior to a sleep period |
| Prepare for sleep with relaxation techniques (e.g., breathing exercises, meditation, soft music) |
| Avoid automatic/negative, catastrophizing thoughts prior to a sleep period (e.g., "I'll die if I have another night on call like the last one," "this lifestyle is completely unbearable," "there is nothing I can do to make it better") |
| Insert positive thoughts prior to a sleep period (e.g., "I'll feel better after I've had some rest," "I have a vacation booked next week and will enjoy more fulsome sleep soon," "even a short bout of sleep will help towards restoring my sleep debt" |

In summary, extending, preserving or "banking" sleep, and learning how to achieve adequate sleep recovery after a period of sleep deprivation while on call or a night shift promotes future resilience to psychological, physical, and operational stress.

**Skill-Building Exercise: How to Incorporate "Sleep Anchoring" Into Your Busy Schedules**

Consider your normal hours of sleep during weekdays and weekends and try to designate 3–4 hours of sleep (or approximately half of your normal sleep duration) after a night shift that is close to the beginning or end of your normal sleep period to maintain your regular circadian rhythm and to minimize disruptions [44, 46].

## Adopting Healthy Sleep Habits: Taking Care of Yourself

In an overworked and chronically stressed medical world, there is an increasing desire for physicians to live a healthier and more fulfilling life. Thus, there has been a collective shift in medicine toward more holistic approaches in achieving a positive mindset and healthier lifestyle as well as returning to the basics of self-care, which includes more optimal sleep. Some common strategies to minimize the negative effects of work-related sleep deprivation, promote optimal sleep habits, and prevent burnout are further discussed below. (Also see Table 13.7 for additional tips to manage and mitigate sleep loss.)

## Physician Engagement and Collaboration to Manage Sleep Deprivation

- *Get involved:* Always reassess your on-call night schedule and find ways to insert brief periods for short naps even during busy call shifts if you can. It can be protective against burnout if you spend this time optimizing your opportunities for rest as part of your regular job.
- *Collaborate:* If you work on a team, particularly on-call or on shifts, consider ways to split the shift or rotate who is providing patient care to ensure that everyone can get some rest overnight if possible. Working with your attending physician and resident peers to promote a healthy and safe work environment, such as ensuring those who have worked long shifts take post-call days or get an opportunity to rest and recuperate, can also be crucial and help to instill a sense of camaraderie and support. Residents are encouraged to become aware of the regulations by their governing bodies related to maximum duty hours and post-call allowances, and to work with rotation leads and on-call schedulers to ensure that regulations are upheld.

**Table 13.7** Tips to manage and mitigate sleep loss

| |
|---|
| *Take a "power nap"* |
| Napping can be refreshing but also can disrupt your circadian rhythm (the body's natural sleep-wake cycle). |
| Try to nap for only 10–20 minutes. This keeps you within the early, lighter stages of sleep. |
| If really sleep-deprived, nap for a full sleep cycle of 90 minutes. |
| If sleep problems persist for more than 2 weeks, contact a clinician. |
| *Get the best quality sleep* |
| Get sunlight in the early part of the day. |
| Practicing a relaxation technique during the day can improve sleep efficiency. |
| Download a good wellness app and learn to practice letting go of stress. |
| Although this is discussed elsewhere in this book, getting the minimum recommended amount of physical activity per week improves sleep quality and reduces daytime sleepiness (See Chap. 11). |
| *Ensure optimal environment for sleep* |
| Keep your bedroom cool, dark, and quiet; the body needs time to settle down to initiate sleep. Download free apps for white noise or use a white noise machine or ear plugs. |
| Stop productive activity at least 30 minutes before sleeping; the brain needs time to downshift from the faster brainwaves of alertness and wakefulness to the slower brainwave pattern of restful sleep. |
| Unless you are on irregular on-call shifts, aim to go to bed and wake up at around the same time each day. |
| If you have not slept all night, go to bed extra early the next night to pay down your sleep debt without further disrupting your sleep-wake cycle. |
| *Restrict oral intake before sleep* |
| Hunger or feeling too full can make it difficult to fall asleep. High-fat and high-protein foods take longer to digest and are typically not recommended close to bed. |
| Excessive intake of liquids within 90 minutes of bedtime can interrupt sleep with bathroom trips. |
| Alcohol can increase the stress hormone, cortisol, which makes sleep more fragmented. |
| Caffeine affects the sleep cycle, as caffeine can cause lighter, more fragmented sleep. Sleep experts recommend limiting caffeine to the morning, or avoiding it if sensitive to it (feel jittery) or have sleep disturbance. |

## Pre-Sleep Routine

- This involves avoiding use of caffeine, nicotine, and alcohol before sleep, as well as avoiding exposure to bright light before sleep.
- After night shifts, retire to a room that is dark (consider eye mask), cool, free from interruptions, and quiet (consider ear plugs or white noise machine).
- Do not use screens for 1–2 hours before sleep; the blue light from smartphones, tablets, and laptops signals your brain to stay alert.
- Silence your phone when off-call and getting ready to go to bed.
- Use guided mindfulness sleep exercises; body scan, mindfulness of breathing, or mindful yoga can help you to relax after a busy shift (See Chap. 14).

## Sleep Routine

- *Napping*: Consider napping in mid-afternoon either a 20-minute power nap or 90 minutes, allowing 1 hour to "wake up." Try to nap during the anchor period of your on-duty night shift, if feasible. The off-duty sleep in combination with brief on-duty naps can be effective for sustaining vigilance, learning, and memory when working on-call night shifts.

## Sleep Tips for Physician Parents with Young Children

In addition to the sleep strategies listed previously, the following additional tips may address some issues of interest to parents with young children.

- *Split duties*. Work out a schedule with your partner that allows each of you alternately to rest and care for your child. When

friends and family visit, ask if they could watch your child while you take a "power nap." Tasks, chores, and calls can wait so that you can prioritize sleep when your child is asleep.

- *"Bed sharing" during sleep.* Bring your child into your bed for nursing or comforting, if you wish, but return your child to the crib when you plan to resume sleep.
- *"On the alert" waiting.* There are many parenting approaches about how to get children to fall asleep and stay asleep; an expert opinion in this area should be sought if parents need further support and expertise. For example, some believe that it may be reasonable to let your child cry herself or himself to sleep and to encourage self-soothing, unless you suspect that your child is hungry or uncomfortable. If the crying continues, check on your child; your reassuring presence might be all your child needs to fall asleep.

**Skill-Building Exercise: How to Mitigate Sleep Deprivation**

- Before you can begin to address and work to actively mitigate sleep deprivation, you need to determine what may be contributing to your sleep disruptions and difficulties, as well as understand the impact this may be having on your daily life and functioning.
- To better assess your current routines and sleep patterns, consider trying out a sleep diary or tracker, which helps you to monitor your sleep and energy over time, as well as get insight into factors that could be impacting this either positively or negatively.
- Options for sleep trackers include apps such as Sleeplife, SleepScore, or Sleep Cycle, technology including Fitbit or Apple Watch, while sleep diaries can be found online including this comprehensive one from the National Sleep Foundation: https://www.sleepfoundation.org/sites/default/files/inline-files/SleepDiaryv6.pdf.

- You can also create your own sleep diary, recording over several days pertinent points including bedtime, waketime, disturbances in sleep, and other factors such as mood/anxiety, bedtime activities/routine, or caffeine intake. Be sure, however, to keep the diary or tracker near to your bed so you are reminded to use it and record information both at night and in the morning upon waking.
- After monitoring your sleep patterns for a few days, reflect on the findings and try to identify some of the potential problems that may be contributing to sleep loss or disrupted sleep. *Utilizing this information, you can then review the recommendations and strategies discussed in this chapter* to try and promote healthier routines and sleep practices.

## Check Your Learning

*Case Study: Still Awake?*

### Case Part I

Amanda is a 28-year-old second-year internal medicine resident. A lifelong high-achiever, she did well in medical school and was thrilled to be matched to an internal medicine program near her family. She is keen to pursue cardiology. The initial transition from medical school into residency was more challenging than she had expected leading to times where she felt run down and questioned whether she was good enough. However, she found reassurance in the positive feedback from her preceptors, as well as patients and families with whom she was able to develop a strong rapport. To do so, she relied on her ability to deeply empathize and explore each case from a humanistic perspective. Over the last few months she finally found her footing, got into the swing of residency, and generally felt at home among her group of

co-residents. Upon starting the new academic year, Amanda felt a mix of both excitement and nervousness as she was now considered a senior resident, which brings on new and heightened responsibilities within this role.

A few months later, Amanda is well into her second year. She has been working for 3 months on Clinical Teaching Unit (CTU) at a tertiary care hospital. Not only is she helping to run a busy team overseeing the care of more than 20 patients, but she is also responsible for leading codes should they occur, supervising and teaching both junior residents and medical students on her service, and is required to complete frequent overnight call shifts.

Given all of her clinical and academic duties, Amanda's days are long and often extend into the evening as she finishes up her notes and debriefs the day with her supervisor. She feels exhausted upon returning home. Self-criticism is now constant for her, while perfectionism and mounting pressures to perform also continue. She feels that there is more she needs to do to prepare for and to study in order to provide optimal patient care and educational experiences for the learners she is responsible to. Amanda struggles to find the time to accomplish everything she needs to in a way that meets her own internal expectations. As such, she begins sacrificing her leisure time, including visits to the gym and outings with friends, and also stays up later, now going to bed past midnight. Once in bed, Amanda finds that her sleep is disrupted as she struggles to fall asleep. She finds herself thinking about all the devastating pain, disease, and death she has witnessed during the rotation. She also frequently has dreams about making an error or something going wrong at work.

When her alarm goes off at 6:00 AM, after only 5 hours of sleep, Amanda struggles to get out of bed and feels like she barely slept. She makes a promise with herself to go to bed early the next night to catch up on some much-needed sleep. However, Amanda continually finds herself staying up late and having difficulties falling asleep as the pressures never seem to lessen and her to-do list never seems to shorten.

***Question*. In considering Amanda's case, what type of sleep deprivation is she experiencing?**

A. **Acute sleep loss**
B. **Chronic partial sleep loss**
C. **Sleep inertia**

**Answer: B** ✓

*If Amanda were to have pulled an all-nighter or stayed up one night on call, this would be an example of acute sleep loss, which refers to either a significant reduction in one's sleep or no sleep at all, usually accumulated over 1–2 days.*

*In the case described above, however, we learn that Amanda's sleep has been disrupted over the last few months, leading to gradually increasing sleep debt. Not only has the quantity of her sleep been impaired, but the quality of her sleep with regard to restfulness has also been inadequate, likely due to work demands as well as an initial insomnia possibly stemming from anxiety, rumination, and difficulties processing and coping with the grief and psychological stress of her work as a physician. As Amanda's sleep debt accumulates, this can not only contribute to the experience of burnout, but can possibly lead to other negative sequalae.*

*There is no information in the case vignette to suggest that she has experienced sleep inertia, which is a state of sleepiness and impaired cognition commonly experienced upon awakening from deep sleep* [17].

## Case Part II

Given her limited sleep, when Amanda returns to the inpatient unit each day she finds herself feeling groggy. She feels as though she is dragging herself from room to room to see her patients, and each day she hopes that there are no codes, as she is not sure she has the energy to tackle the task of providing emergency care.

During the few spare moments she has to write notes or review bloodwork in the learner lounge, she finds herself nodding off.

She is embarrassed about this and worries that this may get her into trouble if others notice or if this were to occur in front of a patient. Amanda admits to feeling slow and unfocused, and has trouble answering students' and patients' questions efficiently and meaningfully.

To cope, Amanda has started consuming more caffeinated coffee. She finds this helps her to feel more alert during the day and more energized. Before she knows it, she has gone from one coffee per morning, to four large cups throughout the day. She has also recently started to consume a caffeinated energy drink to help her avoid the inevitable crash and get through her work. Despite continuing to feel exhausted by the end of the night, Amanda has ongoing and worsening difficulties falling asleep, which continues the cycle of fatigue. She also finds that during the course of the day she is increasingly anxious, leading her to doubt herself more, recheck the work she has already done, and become irritable with her patients and learners.

***Question***. **True or False: Caffeine could be contributing to Amanda's current difficulties including her sleep deprivation.**

A. **True**
B. **False**

**Answer: A** ✓

*Caffeine is one of the most popular and commonly used substances, which is found in several foods and beverages, including tea, coffee, soft drinks, and energy drinks. Caffeine can act as a stimulant and can provide a transient increase in one's wakefulness and level of alertness and has been considered a performance-enhancing drug as it can improve one's attention, processing speed, and reaction time* [49].

*The problem however is that these effects are temporary and only are positive or helpful up to a certain point, after which higher doses can be detrimental leading to restlessness, irritability, anxiety, tremulousness, headache, nausea/vomiting, and tachycardia.*

*In addition, the effects of caffeine on the body can last for an average of 6 hours, which depending on when it is consumed and the quantities consumed can interfere with sleep onset latency and, subsequently, total sleep time, which appears to be occurring for Amanda whose caffeine intake has significantly increased with evening doses.*

*To avoid the negative effects of caffeine, besides being mindful of the amount of caffeine you consume, strategies such as avoiding caffeine at least 6 hours before bedtime has been recommended.*

***BONUS Question.*** **What is the recommended maximum caffeine intake per day?**

A. **200 mg per day**
B. **300 mg per day**
C. **400 mg per day**
D. **600 mg per day**

**Answer: C** ✓
*Health Canada and the US Food and Drug Administration both recommend, for adults, a maximum of 400 mg of caffeine per day (which is considered the equivalent of about 3 regular cups of coffee).*

## Case Part III

Amanda continues to struggle with her sleep and energy. While she recognizes this is having a negative impact on her functioning at work and mental health, she is not quite sure how to address this. She is also dismayed to receive the next call schedule in which she learns that she is on call at least 1 in 7 days, including three shifts occurring in short-order over 2 weeks, given that some of her colleagues are away on vacation.

By the third call shift, Amanda feels drained and as if she is running on empty. Overnight she almost made an error in writing orders in one of her patient's electronic medical records, which

she fortunately noticed in time to rectify. This is her second near-miss medical error in the last week. This is unsettling for her, and has prompted even more checking and self-scrutiny, which slows down her performance while on call even more.

At 8:00 AM, after a 24-hour work shift, Amanda hands over her cases to the incoming day staff. She can barely keep her eyes open, let alone formulate her own thoughts. Handover seems to go on and on, and she is stopped by the attending physician repeatedly as she continues to miss pertinent points about each case. She experiences a sense of shame when her attending staff provides some strong constructive criticism, witnessed by several of her colleagues and learners.

Though Amanda is holding back tears and cannot wait to get home to her bed, she stays behind another hour and a half to finish up some of her notes and tie up some loose ends, which her attending staff requested as she had not followed up on all of her patients' treatment plans. It is close to 11:00 AM when she finally gets in her car to head home.

Amanda leaves 15 minutes away from the hospital. It seems close enough, but to be safe she turns up the radio and ensures the air conditioning is on to keep her awake. Despite this, Amanda dozes off while stopped at a red light, waking only when another frustrated driver honks at her to drive. About 5 minutes from home, Amanda again dozes off, this time while driving down a busy road. She swerves into the other lane and is jolted to her senses by loud honking. She swerves back into her lane just in time.

When Amanda pulls into her driveway her heart is pounding. She realizes that she narrowly avoided an accident. She also realizes that she could have caused a serious accident putting herself or others at significant risk. She recognizes the urgency to do something to address the current situation.

***Question***. **Which of the following are negative effects possibly associated with sleep deprivation?**

A. **Medical errors**
B. **Handover errors**
C. **Motor vehicle accidents**
D. **All of the above**

**Answer: D** ✓

*As we see from the case vignette, Amanda is experiencing the compounding effects of persistent and multiple stressors, and in particular, acute-on-chronic sleep deprivation.*

*With ongoing and worsening sleep deprivation, Amanda's cognitive abilities are likely compromised, resulting in difficulties with attention, processing speed, memory, and judgment, leading to making errors at work. Though Amanda catches some of these errors or near misses herself and is made aware of handover concerns by her team, her sleep-deprived performance has the potential to significantly impact patient care, particularly if she were to be working more in isolation or if there were fewer safeguards in place.*

*Not only have we learned that sleep deprivation can impact our cognitive processes and thereby impact our occupational or academic performance and functioning, but lack of sleep can also put a physician's own well-being and safety in jeopardy. Most concerningly, some studies have shown that driving while sleep deprived is similar to driving while intoxicated, an association which could suggest an increased risk of motor vehicle accidents* [31].

## Case Part IV

After taking a much-needed nap upon returning home, Amanda wakes with a raging headache likely resulting from a perfect storm of sleep loss, dehydration, and caffeine withdrawal. She feels terrible and though she had been hoping to get caught up on some reading, she spends the remainder of the day in bed resting.

Amanda feels exhausted and depleted and knows her current routine is not sustainable for much longer. She feels a sense of profound guilt given what transpired on call and post call as she realizes she put both herself and her patients at risk. Motivated to make a serious change, she requests a professional day leave to give herself a long weekend off, which she plans to spend with her boyfriend reconnecting and to catch up on some of her sleep. She may not even set her alarm those days!

Amanda, however, realizes that change will also need to extend into her daily routine. She begins to work on setting some goals for herself around going to bed earlier so that she can achieve closer to 8 hours a night, which leads her to feel more rested, and to begin cutting down on her caffeine intake beginning with eliminating her nightly energy drinks, which also helps her to fall asleep a little more easily.

Though she experiences some improvements with these initial changes, Amanda continues to find that she has a difficult time relaxing at night and slowing down her thoughts which include never-ending to-do lists once she stops work for the night. While at a social retreat with her co-residents, the topic of wellness and self-care arises. Amanda shares some of her recent challenges and is relieved to hear that others in her training program have gone through similar experiences. Through their group discussion, Amanda learns of some helpful tips and strategies such as avoiding use of the computer, TV, or cellphone close to bedtime. Her peers introduce her to some mindfulness smartphone apps and to the concept of "sleep anchoring" which will aid her in ensuring restorative sleep post call or shiftwork without upsetting her regular sleep schedule.

Slowly Amanda begins to change her nighttime routine to one in which she reads for fun about an hour before bed and then listens to a mindful body scan before going to sleep. Not only has this helped to restore some of her work-life balance by engaging in these self-care practices, but it has also helped to relax and quiet her mind, in addition to falling asleep more quickly. It is a work in progress, but already Amanda begins to feel better physically, mentally, and emotionally, helping to restore her confidence in herself and in her role as a physician caring for others.

***Question***. **Which of the following are evidence-based strategies to manage and prevent sleep loss?**

A. **Sleep hygiene**
B. **Sleep anchoring**
C. **Relaxation and mindfulness**
D. **All of the above**

**Answer: D** ✓

*As we have learned through this chapter, there are several strategies that can be helpful in restoring one's sleep as well as preventing significant sleep debt. The efficacy of each practice or approach may vary based on the individual as well as the factors contributing to their disrupted sleep. As such, a helpful first step may be to reflect on your current sleep patterns and assess for possible contributing factors including caffeine, activities prior to bed, and stress, as discussed in the skill-building activity above.*

*In any case, some of the core recommendations for optimizing one's sleep, in which Amanda begins to engage, include sleep hygiene, sleep anchoring, and relaxation training. These have all been supported by research, and though may take some practice and time can be quite efficacious.*

*Despite best efforts, individuals may experience ongoing sleep difficulties. This may signal other problems at play, such as a sleep disorder or other mental health conditions. Seeking help from a physician may be important to further investigate and treat if needed.*

**Key Takeaways**

- Sleep is a vital component supporting physician wellness and optimal functioning.
- Sleep loss can be accrued through different means including the following:
- An acute reduction in sleep, such as from on call shifts
- Gradual and chronic reductions in sleep quantity and quality related to work or personal demands
- Sleep disorders including insomnia
- Sleep deprivation among physicians can be associated with compromised personal health and well-being, as well as occupational performance and functioning. These factors can negatively impact patient care.
- Caffeine can promote alertness and enhance performance; however, it should be used judiciously and in moderation so as not to contribute to the cycle of disrupted sleep, subsequent fatigue, and impaired performance. Consuming caffeine in high amounts can be

detrimental and lead to an overdose manifesting as restlessness, tremors, headache, tachycardia, gastrointestinal disturbances, dehydration, irritability, and anxiety.
- There are many different approaches to restoring sleep that can be personalized based on an individual's needs. Sleep hygiene, sleep anchoring, and relaxation training, or other lifestyle changes such as optimal exercise, have however shown to be effective. (See Chaps. 11 and 14)

## Selected Resources

Additional resources about sleep are illustrated in Table 13.8.

**Table 13.8** Selected resources about sleep

| Resources | Description |
|---|---|
| World Sleep Society www.worldsleepsociety.org | Membership provides access to international best practices, current research in the field of sleep medicine, and a global directory of sleep medicine professionals. |
| Centers for Disease Control and Prevention: Sleep and Sleep Disorders www.cdc.gov/sleep/index.html | US organization which provides basic information and statistics about sleep, as well as podcasts, publications, and other resources to help promote healthy sleep. |
| Canadian Sleep Society www.css-scs.ca | Canadian organization which provides a directory of sleep centers within Canada, as well as helpful links, publications, books, and podcasts. |
| American Academy of Sleep Medicine www.aasmnet.org | US organization which has resources for both patients and providers, including guidelines and papers regarding the diagnosis and treatment of several sleep disorders. |
| National Sleep Foundation www.sleepfoundation.org | A visually pleasing site filled with short and easy-to-read articles about various sleep topics, sleep disorders, and tips and tools to aid with disrupted sleep. There are also quizzes and apps to help assess your sleep! |

**Table 13.8** (continued)

| Resources | Description |
|---|---|
| American Sleep Apnea Association www.sleepapnea.org | A website devoted to sleep apnea, providing education, research, recommendations regarding treatment and related services, as well as peer-support forums. |
| Better Sleep Council www.bettersleep.org | A comprehensive website exploring the various factors that contribute to good night's sleep. |
| Harvard University: Healthy Sleep http://healthysleep.med.harvard.edu/healthy/ | An interactive website filled with videos and information to help understand why sleep matters, the science behind sleep, and how to achieve restorative and healthy sleep. |

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# 14

# Healthy Habits: Positive Psychology, Journaling, Meditation, and Nature Therapy

Tara Riddell, Jane Nassif, Ana Hategan, and Joanna Jarecki

## Mitigating Stress

### Stress – A Helpful Versus Harmful Response?

Stress is an inherent part of life, evoked by a multitude of psychological and physiological triggers such as emotions, illness, lack of

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sleep, and even excessive physical exercise [1]. Stress is also common to the practice of medicine, as shown in Table 14.1. If one considers some of their "stressful" experiences along their medical journey, this may bring to mind reminders of exams, having had to perform clinical skills or procedures, manage acutely unwell patients, manage a difficult situation or adverse event, being sleep deprived on call, and even going through residency interviews. These experiences still vividly stand out in one's minds given the emotional response, angst, and anxiety they provoked.

While the goal for many is to reduce stress when possible, it is important to remember that at times, stress can be a normal physiological survival response to maintain life and enhance performance. Consider the Yerkes-Dodson law, shown in Fig. 14.1. This is an inverted-U shaped graph which depicts how performance changes with one's level of arousal or stress [3]. Too little stress

**Table 14.1** Specific factors that can promote stress in resident physicians [2]

| Factors contributing to stress |
|---|
| Academic workload |
| Exams and frequent evaluations/ observation |
| Inadequate study habits |
| Poor time-management skills |
| Competition with peers |
| Time spent commuting |
| Time spent using technology or completing documentation |
| Conflicts in work-life integration |
| Romantic relationship management |
| Family demands |
| Financial difficulties |
| Inadequate nutrition or hydration |
| Sleep deprivation |
| Psychological/psychiatric condition |
| Other medical condition |
| Exposure to human suffering |
| Medical error or adverse events |
| Fears of failure or pressures to perform/excel |

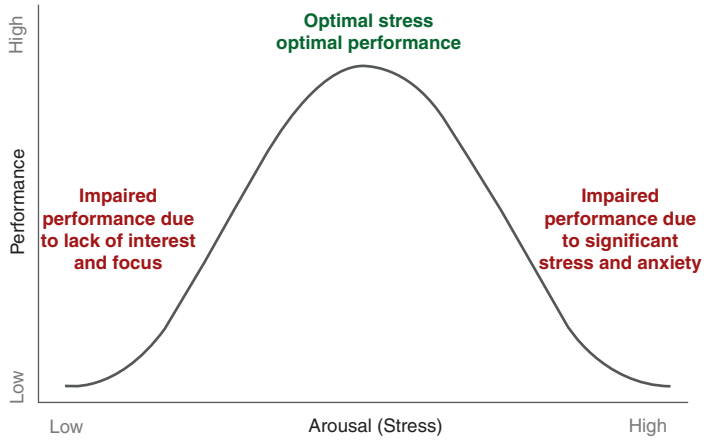


**Fig. 14.1** The Yerkes-Dodson law. (Adapted from Ref. [3])

may mean one does not feel interested in studying, for example. A resident in this position could find it difficult to focus on the task at hand, perhaps even leading to avoidance or procrastination at the extreme. This could result in poor performance on their OSCE or difficulties in completing the procedure they were expected to perform on rotation the following day. In this case, some stress can be adaptive and perhaps even protective. (For more details on stress, see Chap. 8)

Of course, the Yerkes-Dodson law also suggests that one's performance improves with stress, but only up to a certain point [3]. With too much stress and arousal, performance begins to decline again as individuals experience significant anxiety and feel so overwhelmed that they are unable to focus and function. This is where stress can be harmful and when tools to reduce or combat stress can be imperative.

## Review of Stress Physiology

Known as the "flight-or-fight" response, stress causes a cascade of events triggered by the sympathetic nervous system [4]. As shown in Fig. 14.2, and discussed elsewhere (see Chap. 7), the stress

hormone, cortisol, is released by the adrenal glands, which has subsequent impacts on the body. When the body is faced with a "stressor" (e.g., emotion, disease, toxin) the hypothalamic-pituitary-adrenal axis is activated. The release of cortisol triggers an acute release of epinephrine and norepinephrine which increases blood pressure and can cause palpitations, feelings of panic, and brain fog [4, 5].

As shown in Fig. 14.3, a chronic rise in cortisol has detrimental outcomes to several biological systems; one such example is the

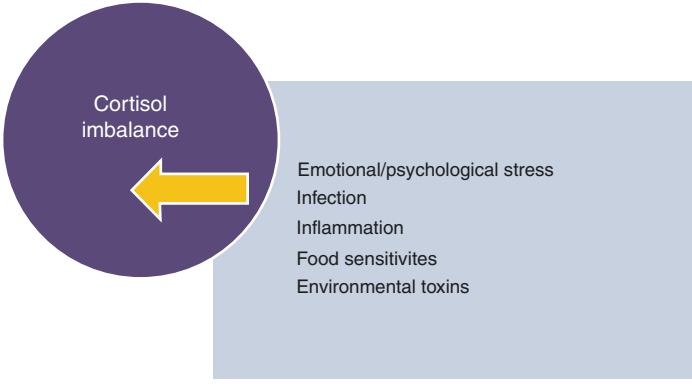


**Fig. 14.2** Factors that increase cortisol

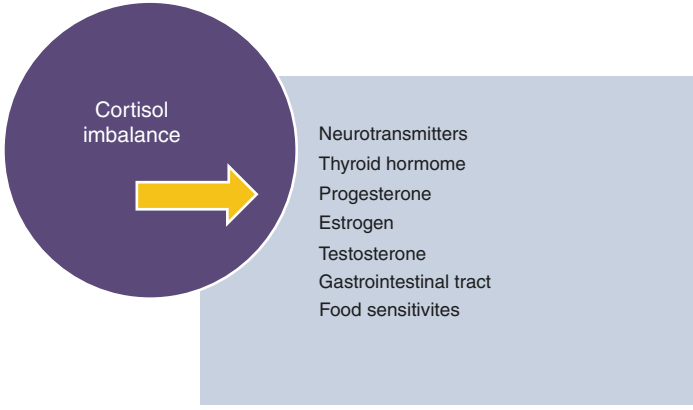


**Fig. 14.3** The physiologic factors affected by stress

pancreas, manifested by increasing blood sugar and body fat as the pancreas struggles to keep up with the high demand of insulin, which results in weight gain [6]. Stress also impacts the gut, including the bacterial flora balance [7]. When the gut ecosystem is off balance due to stress, not only can this result in symptoms of abdominal pain, bloating, and ulcers, but there is a cascading effect on the immune system since 80% of the immune system resides in the gut [5, 7, 8]. Moreover, chronic cortisol can further affect the gut-brain axis, defined as the "relationship between the gut microbiome, digestive health, and cognitive function, memory, depression, anxiety and other mental and behavioral health issues" [8].

The cascading effect of hormonal imbalance secondary to stress can impact the health of medical students and physician trainees. Studies have shown that stressors affecting medical students can be associated with "depression, burnout, somatic distress, decreases in empathy, serious thoughts about dropping out of medical school, suicidal ideation, and poor academic performance" [4]. Medical students and medical trainees pursue a career to care for patients who present with illness and suffering. However, what tools and options do these physicians in training have to keep themselves healthy and combat the negative effects of sustained high stress levels associated with the demands of becoming a physician, to maintain their performance and well-being?

## Tools to Cope with Intense Stress

Today, it is not uncommon for individuals to practice yoga, schedule routine massage therapy sessions, or meditate on a regular basis. These practices are now more socially accepted than ever and are incorporated into, for example, child and adolescent education programs, with benefits to physical health, psychological well-being, social skills, and academic performance [9]. In North American medical training, where burnout is rampant, policy changes have been put in place, such as restricting the work week to a maximum of 80 hours to improve patient safety and minimize trainee burnout [10, 11]. Medical training institutions are now

deliberately providing programs that empower frontline hospital staff and trainees with "nontraditional" outlets to deal with psychological stress and improve well-being, such as mindfulness training [12, 13].

## Strengths and Virtues: Utilizing Positive Psychology to Propel One Forward

When unrelenting stress persists, this can lead to burnout which in turn can lead to the development of a mental health condition. Stress in this case depletes one's resources and stamina, such that one is no longer functioning at their best. When physicians are affected by burnout or the ill sequelae related to this, it is often believed that they are lacking resilience or capacity to maintain their well-being. Mental health/resilience and mental illness/burnout had formerly been considered dichotomous ends of a single linear spectrum (as seen in Fig. 14.4). Recent research suggests otherwise. For example, a study of over 280 physicians from the UK discovered that physicians could have high levels of resilience, while also being affected by burnout and secondary traumatic stress, illustrating that burnout and resilience may in fact be unique and distinct entities [14].

Over the last few years, the idea of burnout vs. resilience and mental illness vs. mental wellness has evolved such that these terms are now understood to be distinct phenomenon on related but separate spectra. A two continua model, as shown in Fig. 14.5, has been proposed [15]. This demonstrates that well-being is not solely defined by the presence or absence of disease or distress but rather by a state of emotional and psychological health in which one is accepting of themselves, adaptable and flexible in the context of daily stressors, engaged in social relationships, and carries with them a sense of purpose and confidence in their own abilities


**Fig. 14.4** Traditional model of resilience versus burnout

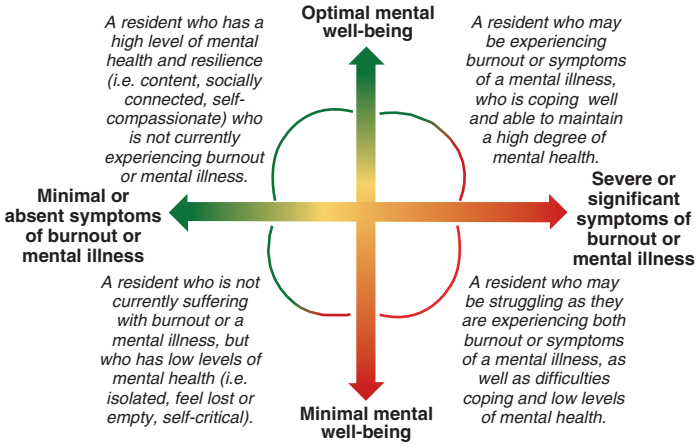


**Fig. 14.5** The two continua model of mental well-being and mental illness. (Adapted from Ref. [15])

[15]. Beyond this, it demonstrates that it is possible for a physician to possess such skills and positive mental health, while still experiencing symptoms of a mental health condition or even burnout [15]. This is important to consider as physicians tend to internalize burnout or their struggles as a form of personal weakness or as reflective of some type of deficiency. Yet this self-blame may not be entirely fair or justified as there are many other external factors and those beyond one's control that can lead to impairment and development of injury or illness. This idea is similar to the notion that a person can still develop a cold despite taking the best preventative efforts.

So how can one utilize this model to foster overall well-being? Regardless of where physicians find themselves within the continua, adopting a strengths-based approach can be utilized to promote overall mental health and well-being. This approach can also be used to foster coping and to work through the challenges and stressors that may be contributing to burnout and suffering. Strength-based interventions are a component of positive psychology. This is a practice which acknowledges and develops one's strengths or skills that otherwise would be minimized by innate cognitive distortions and biases. Positive psychology also

helps one to learn to reframe negative situations or challenges in a way that is empowering.

Within medicine and medical training, challenges and stressors are a common daily experience. As many physicians can attest, such experiences can lead to becoming bogged down and stuck in a negative cycle which may fuel self-criticism and highlight one's vulnerabilities. This can further promote cynicism and feelings of defeat, leading such situations to appear daunting to overcome or move beyond. By acknowledging personal strengths and utilizing them at work, mood and self-concept can be bolstered as well as building confidence in the face of adversity or stress.

Though a paucity of data exploring the use of such an intervention among healthcare providers remains, current research is promising and has demonstrated that utilizing strengths, with patients suffering from mental health conditions, can be associated with positive affect, overall well-being, life satisfaction, and even recovery from mental illness [16]. When utilized in the workplace, benefits with regard to engagement and finding meaning in one's work, as well as a sense of competence and job satisfaction were noted, which may help to prevent and protect against burnout [17, 18].

**Skill-Building Exercise: Living in Line with One's Strengths and Values**

For some, the concept of utilizing personal strengths may seem simple. While it can be a straightforward and effective tool, reflecting on and acknowledging personal strengths may be uncomfortable, particularly for those who may be self-critical. Knowing how and when to best practically apply this tool can also seem overwhelming when starting out. Consider utilizing the following steps to help guide you:

1. **Identify your *core* or *signature* strengths.** These are a set of strengths that are deemed to be central to your identity, and highly valued [19–21].
   (a) To assist with this, consider using a free online survey for character strengths (e.g., the online VIA Character Strengths Survey; see section "Additional Resources") or reflect on what a loved one or colleague might say about your strengths and abilities.
   (b) Following your own personal reflection or completion of the survey, identify your top four to five strengths.
   (c) Reflect on these findings:
      - Are you surprised by the results?
      - How might you be utilizing these strengths already?
      - How have these strengths helped you succeed and overcome obstacles in the past?
2. **Utilize these strengths in your day-to-day activities, and particularly when challenges or difficulties arise.** Research has shown that applying at least four of your core strengths in your work can help promote more positive experiences [17].
   (a) Think about your current rotation, clinical activities, or extracurriculars. Are these utilizing or building on your strengths? If not, consider ways in which you could capitalize on or incorporate these strengths in your daily commitments.
   (b) Think of a time recently that was difficult, when you felt you struggled or when you were particularly hard on yourself. Instead of thinking about this from a perspective of something that needs repair or fixing, consider how this weakness or vulnerability may in fact be considered a strength. What does this say about your character or your values? Consider how such strengths may be utilized to help you overcome such challenges in the future.

(c) Think of a challenge you are currently facing, or which may be arising in the future. Consider how your core strengths may help you to work through or cope with this challenge.

***Bonus Tip:*** *Consider setting SMART (Specific, Measurable, Attainable, Relevant, and Timely) goals for yourself to help apply your strengths and skills, and to turn these strengths into positive habits* [22].

## Journaling: Harnessing the Healing Power of the Written Word

Journaling and diary writing have been practiced for centuries. Though initially used to document observations, chronicle travels and discoveries, or detail life events and experiences, it was not until the 1960s and 1970s that this practice was discovered to have therapeutic value, such as promoting personal growth and wellness [23].

Currently, several different forms of journaling and written expression exist; however, writing in general is thought to be beneficial, and considered to be one of the most effective creative outlets that helps to lessen psychological distress [24]. Written disclosures are postulated to be effective through the facilitation of emotional expression, which provides a safe and adaptive release of emotions, as well as cognitive processing which helps to restore a sense of meaning and instills motivation for ongoing growth and development [25].

Regardless of the form or purpose of writing, evidence has supported its use in optimizing wellness. A meta-analysis demonstrated that written emotional expression even among healthy individuals conferred benefits with regard to one's physical health, psychological well-being, and overall functioning [26]. Other studies which have explored the use of journaling, particularly about stressful or difficult events, have demonstrated reductions in distress and depression, reduced physiological arousal and

long-term physical health problems, as well as promoted more effective coping skills, improved social supports, and strengthened relationships [24, 25].

Written expression has also been explored among medical trainees across specialties, specifically as an educational tool. Such studies have demonstrated that journaling or reflective writing can be used as a means to develop meaning and expand one's understanding, build capacity for critical thinking and reasoning in the face of uncertainty or adversity, and hone essential communication skills [27, 28]. From a therapeutic perspective, writing can promote self-reflection and introspection and facilitate release of stress and self-soothing to heal and recover from the array of difficult and traumatic human experiences to which providers are exposed [28]. Perhaps most importantly, writing has been shown to promote and build empathy among medical trainees, which may serve to protect against the decline in empathy and rise in cynicism that is often seen during one's medical career [27].

**Did You Know?**

*There is no "one size fits all" when it comes to journaling practices, content, or habits. Some variations in the practice of journaling are highlighted in* Table 14.2.

Gratitude journaling has garnered considerable attention as it has been shown to be an effective psychotherapeutic intervention [30]. Through consciously attending to the positives in life, one's mindset can be shifted away from negativity and rumination, and this places greater value and meaning on certain experiences or aspects that would otherwise be taken for granted or minimized. Even in the most difficult of situations, gratitude promotes mindful compassion, allowing one to both acknowledge the challenges or pain that one may be experiencing and to also discover a silver lining of unrecognized benefits that can be transformative and healing [30].

**Table 14.2** Journaling strategies

| Type of journaling practice | Description |
|---|---|
| Morning pages | A simple freeform style of journaling, perfect for beginners or skeptics. The only guidelines are solely to write three pages, of whatever comes to one's mind, first thing in the morning. This practice can help to center and clear the mind, release troubling emotions, and promote creativity. |
| Gratitude journaling | Reflecting and documenting on aspects of the day that one is grateful for. This exercise focuses on what is already in existence in one's life. This practice can elicit positive moods and build long-term resilience. |
| Reflective and expressive writing | Denote emotional responses to different events that took place throughout one's day. This will provide a forum to process and cope with stressful events, while dealing with both positive and negative experiences. |
| Bullet journal or personal planning journal | Journaling can consist of a laundry list of to-do's, personal goals, and general experiences that one does not want to forget. This is an aid to "unclutter" the mind and focus on the important things in life. This also is an exercise that provides greater personal organization and in essence decreases stress. |
| Compassionate journaling and letter writing | Covered further in Chap. 15. |

Adapted from Ref. [29]

Gratitude journaling, which often takes the form of creating a list of the benefits or gifts one has experienced, can work in several ways. It has been shown to be associated with positive health outcomes such as reductions in blood pressure, improved immune functioning, increased energy, as well as better quality sleep [30]. Psychologically, expression of gratitude regularly works to foster happiness and optimism, self-acceptance, life satisfaction and meaning, as well as to strengthen interpersonal relationships and promote prosocial behavior [30, 31]. Gratitude is also a method of developing resilience and is thought to have a protective effect by reducing the lifetime risk of anxiety, depression, and substance use disorders [30–32]. Given this, gratitude may also be helpful

for the physician as a tool to maintain wellness and protect against burnout, as has been suggested by preliminary small studies examining the use of gratitude among psychiatry and family medicine residents [33, 34].

**Skill-Building Exercise: Gratitude Journaling**

Gratitude practices are known to be both effective and simple. Without much time commitment, they can be easily integrated into one's schedule at the end of a day before sleep. Reaping the most benefits from expressing gratitude requires some regular practice. Consider offering some gratitude over the next few weeks, using the steps below:

1. *Reflect*
   - Consider the past few days, even if they have felt mundane and boring, or have been highly stressful and difficult.
   - Begin to identify things in your life that you feel grateful for, took pleasure in, or are proud of. This may be simple everyday pleasures, personal strengths or accomplishments, recognition of something beautiful, joyful, or positive, or having received gestures of kindness from another.
2. *Record 3–5 items*
   - Research has shown that the act of writing out what one is grateful for, rather than simply thinking about this, helps to organize one's thoughts and promotes deeper acceptance, which increases the efficacy of the practice [30].
   - After some time to reflect, choose three to five items or experiences that you are feeling especially grateful for, and write this down in a journal.

3. *Savor*
   - To let the value and meaning of these experiences really sink in, take a few moments to savor and appreciate these.
   - If this is difficult, imagine what it would be like if these things that you identified did not occur or were not in your life [35].
4. *Repeat*
   - To reap the most benefits from this practice, it is important to begin to express gratitude regularly. You may find that particularly when starting out, you need to follow the above steps until this practice becomes more reflexive.
   - While those who are particularly keen may aim to practice gratitude on a daily basis, research has in fact shown that gratitude journaling for 15 minutes once or twice a week may in fact be more effective than a daily practice [36].

**Did You Know?**

*There are a wide variety of gratitude practices that help to foster the skill of gratitude. If gratitude journaling is not the right fit, consider some alternative gratitude practices, which are highlighted in* Table 14.3.

## Mindfulness and Meditation: Awareness of the Present Moment

Meditation and mindfulness have well been in existence for centuries; however, it particularly grew therapeutically in light of Jon Kabat-Zinn's work in mindfulness-based interventions [38, 39]. Mindfulness may be defined as awareness that arises from attend-

**Table 14.3** Gratitude practices

| Type of gratitude practice | Description |
|---|---|
| Grateful contemplation | Only have a few minutes to spare? Spend 5 minutes simply reflecting and considering things that you are grateful for or recent positive experiences. This can help to improve one's mood in the short term. |
| Expression of gratitude to another | Expression of gratitude, appreciation, or thanks to an individual either through a small note, longer letter, or in-person during a visit/encounter. This often provides benefits with regard to happiness and psychological well-being to both the individual providing gratitude and the other on the receiving end. |
| Gratitude rounds | Protected time for 30–60 minutes in which residents and faculty meet to discuss satisfying and gratifying encounters with patients, express appreciation for colleagues who have been supportive, and review the aspects of their careers and training which they enjoy. Preliminary evidence supports that this helps promote collegiality, sense of connectedness with others, and boosts mood and sense of purpose/meaning through rediscovering one's joy of medicine. |

Adapted from Refs. [31, 37]

ing purposefully and with curiosity to the present moment and without judgment [38, 39]. A typical mindfulness meditation session brings thoughts into the present, focusing on emotions and sensations that are being experienced "in the now." While it can be initially difficult to quiet thoughts, time and practice can lead to experiencing the benefits of mindfulness meditation, including stress mitigation and reductions in psychological distress [40].

The potential benefits of mindfulness are far-reaching. Generally, mindfulness practices have been shown to increase activation of the parasympathetic nervous system, helping to calm the body through reductions in heart rate, blood pressure, tension, and cortisol [39]. Beyond this it has profound interpersonal and psychological benefits including fostering a sense of connectedness, enhancing empathy and compassion, reducing negative emotions, lessening rumination and anxiety, and reducing depres-

sive symptoms and risk of recurrence [39, 40]. Several studies have also demonstrated that such benefits may also extend to healthcare providers such as staff physicians, resident physicians, and medical students. This evidence supports the use of mindfulness as a valuable tool to cope with the stressors inherent in medical training by promoting positive affect and reducing stress and psychological distress [41]. Mindfulness practices have also been associated with sustained reductions in burnout among physicians, and reductions in anxiety and depression [41–44]. They are also thought to promote humanism in medicine through improving patient-centered care and enhancing connections between patients and providers, as well as enhancing empathic communication and attentive listening [45].

Mindfulness techniques vary, but in general, mindfulness meditation involves a breathing practice, awareness of body and mind, and muscle relaxation. The majority of focused mindfulness techniques begin by instructing individuals how to use a "meditative anchor" [46]. The most commonly taught meditative anchor is that of observing one's breath. Developing full awareness of one's breathing helps individuals to "step back and watch the mind" while in the present moment [46]. This can be particularly effective in regulating emotions, as by simply observing this and avoiding judgment works to decouple one's emotions from maladaptive thoughts which often further amplify the emotional reaction [47], and provides needed time and space to process this. Some practical tips for implementing mindfulness are illustrated in Table 14.4 [46].

Individuals can incorporate mindfulness meditation into their daily lives in various ways since there is no strict requirement for sitting down in a quiet room as a necessary condition. Consider the following examples [48]:

- *While running on the treadmill*, turn off all screens and focus on breathing and where your feet are in space as they move.
- *While brushing teeth or in the shower*, feel the brush in your hand, the movement of your arm as you brush your teeth, and the sensation of your arm moving up and down, and your feet

**Table 14.4** Tips for implementing mindfulness techniques

| Tips | Techniques |
|---|---|
| Use meditative anchors (e.g., breath awareness) | *Examples:*<br>"I'm breathing in, I am fully aware of my in-breath" and "I'm breathing out, I am fully aware of my out-breath."<br>"I'm breathing in, I am here; I'm breathing out, I'm now."<br>"I'm breathing in, there is nowhere I need to be; I'm breathing out, I am already home." |
| Do not force the breath | The breath should follow its natural course and to calm and deepen voluntarily. |
| Adopt an appropriate meditation posture | A good physical posture is needed to help promote a good mental posture.<br>Formal seated meditation sessions are considered an important aspect of mindfulness training; however, there are other ways to practice mindfulness during everyday activities.<br>The meditation posture requires stability, which can be achieved whether sitting upright, on a chair, or on a meditation cushion. |
| Use "mindfulness reminders" | This is a strategy for maintaining mindful awareness during everyday activities. For example, this can be an hour chime from a wristwatch, which upon sounding can be used as a trigger by the person to gently return their awareness to the present moment and to the natural flow of their breathing. |
| Integrate mindfulness into everyday life | The practice of mindfulness is less about finding the time to practice and more about remembering to engage a mindful attention-set during whatever activity one happens to be engaged in.<br>*Example:*<br>As you read this chapter, are you fully aware of your breathing? Can you feel your chest or stomach as they rise and fall with each breathing in and out? Can you feel your body weight on the chair you are sitting on? Are you fully present as you read this or is your mind wandering to what you will be doing next? In summary, are you fully aware of each moment of your life as you are experiencing it? |

Adapted from Ref. [46]

on the floor. If you are in the shower or bath, listen to the water falling, notice what the water feels like against your skin.

- *While driving*, you can put on soothing music or turn off the radio. Find the half-way point between relaxing your hands and gripping the wheel tightly. Notice when your mind wanders and redirect your attention to where you are.
- *While eating*, avoid any distractions such as the phone or television. Slow down the ritual of eating by taking time to notice the food, smell it, and savor the tastes and flavors.
- *While listening to music*, close your eyes and take a few deep breaths, before immersing yourself in the piece. Notice the beat, rhythm, volume, and instruments. If your mind wanders, gently return your attention to the music.

**Did You Know?**

*With the evolution and rapid growth of technology, several smartphone apps and programs have been designed to help users track various components of their health, as well as engage in self-care, relaxation, and even mindfulness while on the go. While there will likely continue to be an influx of research investigating the utility of such technology, preliminary evidence is promising. Data suggests that mindful meditations delivered over just 10–20 minutes of guided audio recordings through an app such as "Headspace" led to reductions in psychological distress and work-related stress, and enhanced subjective well-being which was maintained even several months later* [49]. *Similar results have also been documented when mindfulness apps have been utilized by resident physicians, citing that they too noted improvements in both their capacity to be mindful and their mood* [50].

**Skill-Building Exercise: The 1-Minute Mindful Breathing Script**

Although this exercise can be performed for longer than 1 minute, even in such short duration it will allow you to pause and be in the moment [48, 49]. Even when busy at work, take 1 minute of "quiet time."

- Find a quiet and comfortable place. Sit in a chair or on the floor with your head, neck, and back straight. Lower your eyes. Breathe naturally.
- Focus on your breathing.
- Notice where you feel your breath (the air going in and out), whether at your nostrils, or the rise and fall of your chest or stomach.
- If you wish, place your hand on your chest or stomach and notice how your hand gently rises and falls with your breathing.
- If you wish, you can lengthen the breath.
- Continue focusing on your breath.
- If your mind wanders to other thoughts, bring your attention back to your breath. When you notice yourself carried away in your thoughts, you may wish to state: "I'm thinking" and then gently return to your breathing. Remember not to be hard on yourself if this happens – it is normal!
- As you practice, you may notice your mind empties of thoughts, and you become calmer and more peaceful.
- As the time comes to a close, become aware of where you are. Get up gradually.

## Nature Therapy: Disconnecting from Medicine by Stepping into Nature

With urbanization and growth of technology leading to increased distractions and near constant stimulation, the time spent in nature has been on a downward trend toward minimal and near nonexistent levels for many [51, 52]. This is particularly true for healthcare workers who note even less contact with the outdoors, and which is postulated to have a subsequent negative impact on their perceived levels of stress at work and ability to adaptively cope with such stress [53].

Time in nature, however, has been known for centuries to be important to humans' well-being and can have a restorative effect with regard to both physical and mental health [51]. Nature's therapeutic benefits have been proposed to stem from immersion in an environment that does not require focused attention but which promotes a mindful and meditative cognitive state, and that permits space and distance from everyday stressors and taxing environments allowing one to feel a sense of something larger than oneself and to experience the beauty of the natural world [51–53].

These theories have been supported by research, which has demonstrated an array of benefits associated with time spent in nature, whether through simply observing or by walking or exercising in green spaces. Connection to nature reduces arousal through mediating the activity of the sympathetic nervous system, promotes energy and sleep, and reduces physical pain, likely related to increased physical activity [52, 54]. It also confers significant mental and emotional benefits such as by increasing concentration and memory, promoting curiosity and creativity, enhancing self-awareness and mindfulness, as well as improving emotional regulation and happiness [51–54]. With regard to mental health, nature therapy has been shown to promote resilience by reducing stress and mental fatigue, as well as leading to reductions in symptoms of anxiety and depression [51, 52, 54]. This has been shown particularly in high-stress work environments such as

healthcare, and as such may also enhance worker productivity and satisfaction [53].

**Did You Know?**

*Time spent in nature does not have to be extensive to experience some of the wellness benefits! Studies have shown that when workers took 10-minute breaks which they spent outside, this was associated with improvements in their well-being and ability to focus, as well as greater reductions in stress* [53]. *Further to this, another study discovered that just 30 minutes immersed in nature promoted improvements in one's mood with the greatest effect seen within the first 5 minutes* [53].

*Don't have time to get outside? Do not fear! Research has also suggested that having plants in one's home or spending some time looking at nature through a window, photographs, or artwork can also convey positive health benefits* [53].

**Skill-Building Exercise: Mindfulness Breaks in Nature**

One particular type of nature therapy is called "Forest Bathing" or "Shinrin-Yoku" in Japanese culture [54]. This has been a longstanding traditional component of Japanese medicine that is thought to be both therapeutic and healing, while also promoting overall well-being which may offer some protective benefits [54].

The practice of forest bathing involves immersing oneself mindfully in nature, which is accomplished by connecting with all five senses. This works to promote relaxation and enhance physiological functioning [54], likely through reductions in arousal and activation of the parasympathetic nervous system, which is amplified by the practice of mindfulness [52].

While traditional forest bathing recommends leaving one's distractions behind (e.g., phone, iPod), and going for a relaxed walk in nature for upward of 2 hours if possible, one can still achieve positive effects even after just 10–20 minutes. This may be more suitable and amenable to the busy resident's schedule and could be incorporated during a workday, post-call, or even during sacred free time. To practice some of the principles of *forest bathing*, or mindfulness in nature, try utilizing the following steps:

1. *Find a few minutes to spend in nature.*
   - This may be for 5–10 minutes during a lunch break or call shift, on your walk home, or on a post-call day. Whether you go for a hike, visit a nearby beach or park, walk around your neighborhood block, or simply sit in your backyard or in the gardens at your hospital, nature is readily accessible.
2. *Walk slowly and in a relaxed manner.*
   - Often when we are out in the natural environment, we are walking with a purpose or rushing from place to place. Practicing some mindfulness in nature, however, requires that we let go of our expectations and preoccupied minds (even just for a few minutes).
   - If you are out for a walk, consider walking slowly, almost aimlessly, letting your body and senses direct you.
   - If you are simply sitting outside, take a few deep breaths, ground yourself and immerse yourself in your surroundings.
3. *Connect with your senses.*
   - Check in with each of your senses. Notice what you hear, see, feel, and even smell. Take a few minutes to savor and appreciate these sensations and the beauty around you.

## Check your Learning

*Case Study: The Brain on Silent*

### Case Part I

Priyanka is a fourth-year radiology resident. During the past 4 years, she has experienced a number of stressors and challenges that are typical of postgraduate training. Overall, Priyanka has been doing well. She currently feels mentally healthy, other than some periodic fatigue. She describes enjoying her work, which she does find satisfying, and ensures she has a good sleep regimen, reads for fun at bedtime, and sets a biweekly dinner date with her friends. Priyanka has also become increasingly excited for the future as she has discovered a passion for interventional radiology, which she is hoping to pursue as part of her career.

***Question.*** **Considering the two-continua model of mental health and illness, which quadrant would Priyanka fit into currently?**

A. **Poor mental well-being, significant burnout/mental illness**
B. **Poor mental well-being, minimal burnout/mental illness**
C. **Good mental well-being, minimal burnout/mental illness**
D. **Good mental well-being, significant burnout/mental illness**

**Answer: C ✓**
*Given the information that is available, with regard to mental well-being, Priyanka currently demonstrates resilience and healthy coping strategies particularly around self-care and social relationships. Her work also provides her a sense of meaning and enjoyment, and she seems to be flexible and adaptable in the face of added challenges and stressors, such as additional projects or*

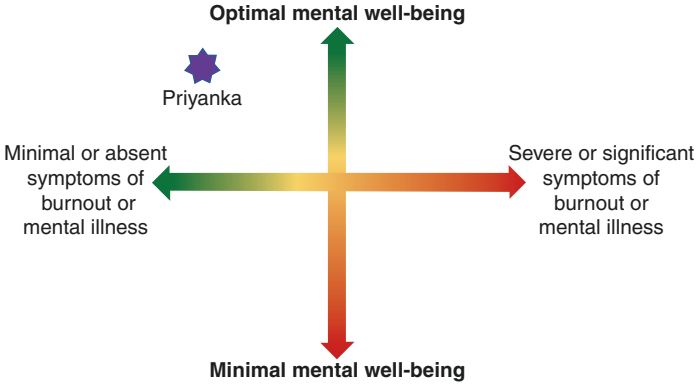


**Fig. 14.6** An example of putting the two continua model into action

*educational requirements. As such, on the mental well-being continuum she is in the green zone, near the top of the vertical spectrum.*

*Priyanka also presently does not demonstrate symptoms suggestive of burnout, nor is there any history to suggest other mental health conditions, such as depression, anxiety, or substance use that may be brewing. Given this, on the horizontal burnout/mental illness continuum, Priyanka also appears to be in the green zone, to the far left.*

*If one were to consider both continuums, then* (*see* Fig. 14.6) *this would place Priyanka in the upper left quadrant which suggests that she has good mental well-being, as well as absent or minimal symptoms presently of burnout or mental illness.*

## Case Part II

From a wellness perspective, Priyanka is flourishing. She does however recognize that it may be worthwhile to find some additional self-care or wellness strategies to integrate into her routine, ahead of her upcoming exam year. She is particularly motivated to

do so after speaking with some of her more senior colleagues who identified that building a wellness plan and having a self-care regimen during the exam year is critical, particularly to mitigate the high stress that tends to be involved.

***Question.*** **Which of the following are additional practices or tools that Priyanka could use to maintain and further optimize her well-being?**

A. **Positive psychology such as optimizing one's strengths or offering gratitude**
B. **Engaging in mindfulness meditations**
C. **Spending more time outdoors during breaks or free time**
D. **Utilizing creative outlets such as listening to music, dancing, or drawing**
E. **All of the above**

**Answer: E ✓**

*In addition to the basics of caring for oneself (which has been addressed in other chapters in Section III), additional and complementary wellness practices that are evidence-based and have growing literature to support use among healthcare providers include positive psychology, which encompasses strength-based interventions and gratitude practices, mindfulness, and nature therapy.*

*While not specifically covered in this chapter, engaging in creative arts including music, visual art, and movement/dance have also been explored for their role in stress management and psychological well-being. More than simply a hobby or interest, such pursuits have been shown to reduce stress and anxiety, improve mood, and promote relaxation* [55, 56]. *In addition, programs which promote creativity have been specifically designed and added to medical education, including observation of and engagement in visual arts which have been shown to develop empathy and are associated with improved overall well-being among medical residents* [57].

## Case Part III

Priyanka is quite intrigued by the concept of strength-based interventions. She is curious to know more about how using her own strengths and skills may help to promote her wellness. Priyanka completes an online questionnaire to help her discover and utilize some of her core strengths. She learns that these include kindness, self-regulation, curiosity, teamwork, and perseverance.

***Question.*** **How might Priyanka utilize these strengths when encountering stressors or challenges?**

A. **Reflect on recent positive interactions with patients or colleagues, as well as express gratitude to her preceptor for recent helpful feedback when reading a complex image.**
B. **Craft a study plan around reading one of her interventional radiology textbooks on common examinable cases.**
C. **Ask for help from a colleague or supervisor when encountering difficulty or an adverse event during a procedure.**
D. **Recall the reasons that she went into medicine, her ambitions for the future, and the many lessons she learned and strengths she built among repeated perceived struggles or failures.**
E. **All of the above**

**Answer: E ✓**
*All of the possible answers are correct, as each one touches on and involves activation of at least one of Priyanka's core strengths.*

*In answer A, kindness is being utilized. By reflecting on positive interactions, particularly in her role caring for others, this may help her to cope with a difficult day reminding her of the joy and meaning she finds in her work. Alternatively, use of a gratitude practice here could work similarly.*

*In answer B, Priyanka would be using elements of two of her core strengths: being curious and keen to learn. These strengths could be used to build interest and fuel motivation to begin studying for her upcoming exam. In addition, her skill of self-regulation, which also involves being disciplined, may help in crafting a reasonable study schedule and ensuring that she keeps to it. This may help her feel more prepared and less overwhelmed down the road.*

*In answer C, if Priyanka were to encounter a challenge and need help, her strength of teamwork could support openness in asking for help from either a trusted colleague or supervisor to problem-solve.*

*In answer D, if Priyanka were to feel defeated or overwhelmed with the prospect of finishing all of her program requirements, she could reflect on how she has persevered in the past, particularly throughout her medical training which has been wrought with various trials and tribulations. By reminding herself of how she has persisted in the past in spite of dark days or failures, and still managed to find success and grow professionally, this may further fuel her motivation and work ethic to continue.*

***BONUS Question.*** **What is an effective strategy to help Priyanka implement some of these strategies and to incorporate her strengths more into her daily schedule?**

A. **No active strategies are required, these are innate strengths after all!**
B. **Goal setting**
C. **Introspective reflection and contemplation**

**Answer: B ✓**

*As was mentioned earlier in the chapter, the use of goal setting, particularly implementing SMART goals, which are specific, measurable, attainable, relevant, and timely, can help to find small but meaningful ways for one's core strengths to be used on a more consistent basis. This may help not only to promote psychological well-being, but also enhance one's efficiency and performance at work, particularly in the face of obstacles.*

## Case Part IV

Priyanka really connects to the principles of positive psychology. In addition to utilizing her strengths, she is also keen to learn the art of practicing gratitude. She is unsure where to start, however, and how to go about this.

***Question.*** **Which of the following practices may help Priyanka begin to engage in offering and experiencing gratitude?**

A. **Simply reflecting on what she is appreciative of and grateful for**
B. **Writing a gratitude letter or expressing thanks or appreciation to another**
C. **Keeping a gratitude journal in which she records a few things she is grateful for each week**
D. **Participating in "Gratitude Rounds" led by her program**
E. **All of the above**

**Answer: E ✓**
*All of the above practices are effective ways, whether informal or formal, and individual or collaborative, to engage in gratitude. As had been reviewed earlier in the chapter, certain forms of gratitude practice may be slightly more effective than others. For example, physically writing or documenting what one is appreciative for or the positive experiences they have encountered as opposed to simply reflecting on them has been shown to be more efficacious. However, all modalities of gratitude practice have been shown to promote positive affect and psychological well-being. At the end of the day, each individual also needs to find a practice that is right for them and can fit into their schedule without becoming yet another "to-do" that is only adding more stress.*

**Key Takeaways**

- It can be helpful to consider mental health/well-being and burnout/mental illness using the two continua model.
  - Individuals may wish to use these continua as a way to check in with themselves and assess where they fit at a particular time. This may help to govern what specific tools, resources, or actions are needed to restore or simply maintain well-being.
- Nurturing one's wellness can go beyond self-care and fulfilling one's basic needs.
  - There are several complementary practices and tools available that can be personalized to further optimize or maintain well-being as well as help to mitigate stressors or burnout.
- Positive psychology involves promoting wellness and approaching challenges through a more positive and compassionate lens.
  - Strength-based interventions involve utilizing one's core strengths to the fullest extent and can help one ensure they are living and working in line with their values and character.
  - Expressive writing offers an important outlet for physicians to share what may be weighing on them and to engage in a transformative experience to process and find meaning.
- Mindfulness offers physicians the ability to ground themselves and to find a reprieve from daily stressors.
  - Mindfulness can be achieved through formal meditation practice, of which there are a growing plethora of apps and videos to guide individuals; however, it can also be achieved through any typical daily activity.
- Time outdoors in nature and green spaces has been shown to be a prime environment for mindfulness and can have a therapeutic and restorative effect.

## Additional Resources

Selected resources for promoting mental health and well-being are illustrated in Table 14.5.

**Table 14.5** Selected resources

| Recommended resources | Description |
|---|---|
| VIA Character Strengths Survey https://www.viacharacter.org | Offers a free, online questionnaire to discover one's core strengths. |
| Positive Psychology Center https://ppc.sas.upenn.edu | This website from the University of Pennsylvania offers extensive information pertaining to the research of positive psychology, educational videos and readings, as well as provide online courses (many of which are free) to gain further skills and tools utilizing positive psychology methodology and theory. |
| Greater Good https://greatergood.berkeley.edu https://ggia.berkeley.edu | Developed by University of California, Berkeley, the "Greater Good Magazine" online offers a wide variety of resources to promote well-being including articles, podcasts, videos, and surveys to assess different aspects of mental health and coping skills. In addition, they also offer "Greater Good in Action" which offers several step-by-step manuals to engage in various wellness practices from empathy to gratitude to mindfulness. |
| Mindful: Healthy mind, healthy life https://www.mindful.org | A nonprofit organization designed to build mindful communities. Offers information and resources regarding the science and health benefits of mindfulness, various practices, and online learning. |
| Global Wellness Summit Trends Report https://www.globalwellnesssummit.com/2019-global-wellness-trends/ | The Global Wellness Summit is an annual conference in which wellness leaders from around the world gather to discuss and problem-solve shared issues. Each year a "Global Wellness Trends" report is developed from the conference discussions as well as input from medical professionals, economists and other experts. This document reveals several trends or ideas that may help to promote sustainability and wellness globally. |

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# 15

# Kindness Begins with Yourself: Strategies to Engage Medical Trainees in Self-Compassion

Tara Riddell and Joanna Jarecki

## Healing the Healer: How Self-Compassion Plays a Role

When asked what the most important component in their interactions with their physicians is, patients tend to highlight the concept of "humaneness," even over competence [1]. The idea of humanity in medicine emphasizes certain traits of the provider, specifically placing high value on empathy, kindness, humility, honesty, and openness [2, 3]. This may come as no surprise, as physicians are often viewed by society as altruistic and trusted individuals, who have devoted their lives to serving their communities and whose intrinsic values revolve around connecting with, caring for, and supporting others. Yet, though these traits are often

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A. Hategan et al. (eds.), *Humanism and Resilience in Residency Training*, https://doi.org/10.1007/978-3-030-45627-6_15

central to physician identity and personality, many physicians struggle to provide the same care, kindness, and concern for themselves and their own well-being.

Enter self-compassion! As taught in Chap. 2, this is a practice that is particularly useful as it combats both the individual and systemic factors that can place physicians at risk for burnout. By encouraging one to prioritize their own needs and adopt a gentler approach to themselves and their way of thinking, it can help those in medicine who persistently place high expectations on themselves, who struggle with chronic self-doubt or self-deprecation, or who have a particularly loud or harsh internal critic. As shown in Table 15.1, the core elements of self-compassion also help the provider develop approaches to minimize and counteract harmful negative or self-critical elements, which can be promoted or reinforced by the culture of medicine and hidden curriculum, and ultimately drive burnout [4]. As such, self-compassion for the physician can work to reduce or prevent burnout, stress, anxiety, perfectionism, compassion fatigue and depression, as well as improve empathy, relationships with others, and promote overall happiness and motivation [5, 6].

Though it may be widely believed that compassion is an innate trait and that one is either compassionate or not, the good news is that self-compassion is a skill that can be learned, although it takes time and practice. While reading through this chapter and engaging in these practices, it can be helpful to consider self-compassion like a muscle, which needs to be regularly exercised and engaged, in order to build strength and endurance so that physicians and physician trainees can not only survive but also thrive in the marathon of life.

*Of note, many of the ideas contained within this chapter are those of the authors themselves, who include a resident physician and an early-career practicing physician. By sharing ideas based on their own personal training and life experiences, it is their hope that other medical trainees and healthcare providers may be able to relate to such thoughts and examples.*

*This chapter contains several exercises intended as a general introduction to self-compassion practices. Some of these exercises have been adapted for the healthcare provider based on "The*

**Table 15.1** Self-compassion vs. self-criticism in medicine

| Self-compassion elements | Meaning | Negative or self-criticism element | Contributing factors | Meaning |
|---|---|---|---|---|
| Self-kindness | Meeting ourselves with warmth and understanding, especially in the face of suffering | Judgment | Anxiety<br>Negative core beliefs<br>Perfectionism<br>Exposure to frequent evaluations and a shaming work culture that expects physicians to be perfect, be free from errors, and be invincible and "superhuman" in their abilities to meet system demands and patient needs | View ourselves with anger, harshness, and criticism, especially in the face of pain and failure |
| Common humanity | Recognizing that we are not alone in our suffering | Isolation | Stigma, fear of speaking out, and lack of community and supports related to a medical culture that promotes competitiveness and punishes weakness or vulnerabilities | Suffer alone, in shame and silence<br>Experience ourselves as an imposter in our programs and workplaces |
| Mindfulness | Observing and processing our pain and negative emotions without judgment | Overidentification | Certain personal coping styles<br>Frequent exposure to difficult situations<br>Stigma or fear of negative feedback for expressing concerns or negative emotions<br>Lack of time or resources to adaptively process one's emotions | Suppression of emotions, avoidance of difficult situations, distancing self from work<br>Or conversely becoming overwhelmed and caught up with negative reactions and experiencing "fight or flight" |

Developed by the authors based on their own personal experiences in medicine to date

*Mindful Self-Compassion Workbook" and "The Mindful Self-Compassion Course," both by Kristin Neff and Christopher Germer, the co-developers of mindful self-compassion [7, 8]. For a more comprehensive understanding of self-compassion, guidance into the practice, and a list of exercises and meditations, please utilize the resources listed at the end of the chapter (See section "Additional Resources", Table 15.2).*

**Skill-Building Exercise: How Self-Compassionate Are You?**

Before beginning to explore self-compassion practices and interventions, it is important to check in and build self-awareness. Consider reflecting on the following questions:

- Am I a kind and compassionate person?
- How do I display kindness and compassion in my role as a physician?
- Am I kind and compassionate with myself?
- Do I treat myself differently than I might a loved one, a close friend, or a patient?
- What might be getting in the way of being kind and compassionate toward myself?

If you are having any difficulty answering these questions or wish to have a more concrete baseline measure of your self-compassion, consider completing a free validated self-compassion questionnaire available online (See section "Additional Resources" Table 15.2) [9]. This will help to further develop your understanding of how you are doing with regards to expressing self-compassion and identify challenges or internal barriers that may be perpetuating self-criticism. This questionnaire can also help you gauge your progress down the road after some time has been spent building on this skill.

**Table 15.2** Selected resources about the practice of self-compassion

| Recommended resources | Description |
|---|---|
| Self-Compassion Quiz https://self-compassion.org/test-how-self-compassionate-you-are/ | A free, validated questionnaire that takes less than 5 minutes to complete and that helps to assess one's ability to be self-compassionate vs. self-critical. |
| Centre for Mindfulness Self-Compassion https://centerformsc.org | A comprehensive website that provides information on where one can access mindful self-compassion courses or circles of practice in their area, how to complete training to become a mindful self-compassion teacher, as well as offering a variety of audio-guided meditations and exercises. |
| *The Mindful Self-Compassion Workbook* by Kristin Neff and Christopher Germer | An easy-to-read workbook that provides more exposure into the science and psychology behind mindful self-compassion. It also offers a step-by-step guide that helps readers build their capacity to experience and foster self-compassion by offering a variety of real-life examples, exercises, and guided practices. |
| Self-Compassion – Kristin Neff https://self-compassion.org | Kristin Neff is considered one of the experts and founders of mindful self-compassion. Her website is a comprehensive resource for all things self-compassion, including ample videos explaining the core concepts and principles of self-compassion and research and evidence behind the practice. There are also several self-compassion guided meditations and exercises that are free to access. |
| Self-Compassion – Christopher Germer https://chrisgermer.com | Developed by Christopher Germer, another leader and founder of self-compassion, this website includes helpful background information on self-compassion, as well as several free and downloadable meditations and exercises. |
| The Compassionate Mind Foundation https://www.compassionatemind.co.uk | Developed by Paul Gilbert, this website offers information on accessing courses and workshops, and provides many resources including online discussions. |

## Keeping It Simple: Finding Small Ways to Give a Little Love to Oneself

Initially, the task of adopting a more self-compassionate mindset may seem daunting and effortful; however, it is important to remember that kindness and humanism are qualities innate to every human being. Physicians are well versed in caring for others, but occasionally may require reminders to turn the spotlight internally and become more attuned to this need for caring within themselves.

Self-compassion can be integrated into one's life in various small, yet meaningful, ways. This section introduces the approach of *informal* self-compassion, which can be used during a moment at home, in the hospital/clinic, or in daily encounters with patients or colleagues. This is a good starting point for beginners, skeptics, and those who may find it difficult to engage in deeper and longer formal meditations. More intensive self-compassion practices and meditations will be explored in the sections that follow.

## Attuning to One's Own Needs: Self-Compassion in Daily Life

Self-compassion involves, in part, a cognitive element. It is a practice that may shift or alter one's thinking patterns and the way in which one perceives and treats themself. However, the scope of self-compassion goes beyond this. The practice of self-compassion can also help promote *behaviors* and *actions* that foster self-care, help one live in line with one's values, and serve as a reminder of one's own needs.

Physicians and healthcare providers may find it particularly challenging to adopt behaviors that promote their own self-care. It is common to prioritize patients' needs and health over their own, and much of their time is devoted to patient care and continuing educational enhancement such that there is barely time to fulfill basic physiologic and psychological needs. When training responsibilities and clinical duties mount, self-care practices, coping skills, and even basic physiological needs are often first to be sacrificed and risk being pushed to the backburner. They tend to be used infrequently, and often only when reaching the point of exhaustion, a time when they no longer hold the same effect. This is where behavioral self-


**Fig. 15.1** The 3 R's of daily self-compassion. (Adapted form [7])

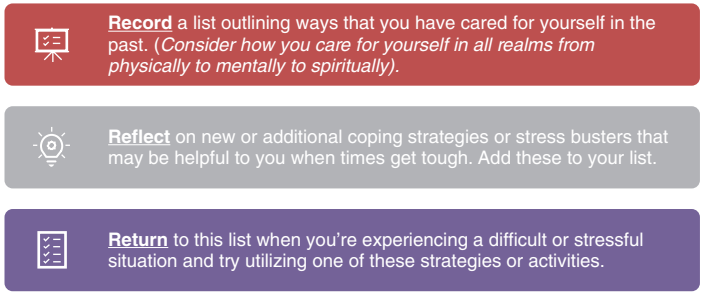


**Fig. 15.2** The 3 R's of troubleshooting daily self-compassion

compassion can be helpful, as it provides *permission* and *space* for the provider to prioritize taking care of themselves and try to regain the balance between their own needs and those of their patients and workplace. To practice this self-compassion in daily life, consider utilizing the steps outlined in Fig. 15.1.

It is not uncommon for individuals to become stuck when trying to work out how best to respond to their own needs. Over the course of training, many physicians may have become distant from the people, places, activities, and things that provide joy and comfort, and reduce tension and stress. For those who encounter this roadblock, it can be helpful to reflect on how one has managed or coped with stress in the past and found respite and relaxation. Figure 15.2 offers guidance to help remind healthcare providers of the tips and tricks they have used in the past to maintain their wellness.

## Grounding Oneself: Soles of the Feet

Consider a time recently when there was overwhelming emotion, hurt, or frustration. Perhaps this was related to a challenging medical code, an upsetting interaction with a supervisor who was critical of the way a case was managed, or related to an argument with a partner after coming home late from clinic. Whatever the case may be, these experiences can be wrought with emotion and can negatively impact the rest of one's day if there is not an opportunity, even so briefly, to take a bit of a breather and to process the difficult emotion.

The problem for practicing physicians and resident physicians, however, is that due to busy schedules and clinical responsibilities, finding the space and time to take a break, acknowledge emotions, and settle oneself can feel seemingly impossible. In many cases, the provider is forced to swallow and suppress these strong emotions, which continue to take a toll and erode their sense of well-being. This can later manifest as diminished presence and attentiveness in subsequent encounters, and being quicker to react or lose patience or one's temper, which only pours further fuel on the fire. So how can this harmful cycle be broken?

One option is to engage in grounding. The practice of utilizing and focusing on one's feet is an established practice in mindful self-compassion. While seemingly simple, this practice has been shown to help regulate emotions [10]. By connecting with the feet, even for just a few moments, attention is directed to the point furthest away from the busy mind and negative thoughts, allowing some needed space to settle and calm [7]. It is also an exercise that fosters mindfulness, allowing one to let go of the past, even briefly, such that one can better attune to the present moment and refocus their efforts and energy more productively. As illustrated in Fig. 15.3, this practice is not onerous and can be practiced any time, including while sitting with a patient, during team rounds, or when walking to and from exam rooms, making it ideal for the healthcare provider who is constantly on the go.


**Fig. 15.3** How to: Connecting with the soles of your feet. (Adapted from [7])

## Comforting Oneself: Soothing Touch

Medicine can be a challenging profession. Healthcare providers devote their lives to caring for their communities and promoting others' health and well-being, which can be incredibly meaningful. However, they are also frequently exposed to trauma and tragedy, pain and suffering, and death and dying, which can take an emotional toll. On some level, providers may recognize that as humans, no one is perfect. Medical mistakes can and do happen,

and despite the best efforts and the newest treatments, no one is 100% successful when it comes to saving or curing patients. Though suffering, death, and loss are universal to the human experience, perfection and high success rates can at times appear to be the expected outcome for the physician. They are immersed within a medical culture that can reinforce internal and external demands to be "superhuman." Physicians are often expected to avert failure, and also experience pressure to mask vulnerability and maintain composure during the darkest and most difficult times. This is a "considerable task. Yet the classic mantra says it best, everyone "keeps calm and carries on." They continue to carry this burden, these distressing experiences, and these troubling fears and worries, all alone. So how can one cope with this? While debriefing and peer support are important in such cases, providing self-comfort can also be effective and can be as simple as utilizing physical touch.

"Soothing touch" is a core component of many self-compassion practices [7, 8]. For some, it may seem a little silly to provide physical touch to themselves; however, most would likely agree that a hug from a loved one, a hand from a concerned friend, or being offered a shoulder to cry on by a trusted individual can be incredibly powerful. This expression of love and compassion thwarts the fight-or-flight stress response and fosters a sense of safety [11], which together work to facilitate the expression and release of difficult emotions or experiences, mitigate self-criticism, and help to calm and soothe. Soothing self-touch, as outlined in Fig. 15.4, works in a similar fashion, by utilizing a combination of mindfulness and self-kindness.

While traditional soothing touch practices most commonly utilize the placement of the hand on the heart (as demonstrated in Fig. 15.4), this may not be the most comfortable position for everyone and may not always be the most discrete for those who wish to do the exercise in public. As such, with this practice it can be helpful to spend time experimenting with other ways to engage in self-touch, to see what feels best. Examples of alternative gentle touch positions are listed in Fig. 15.5.

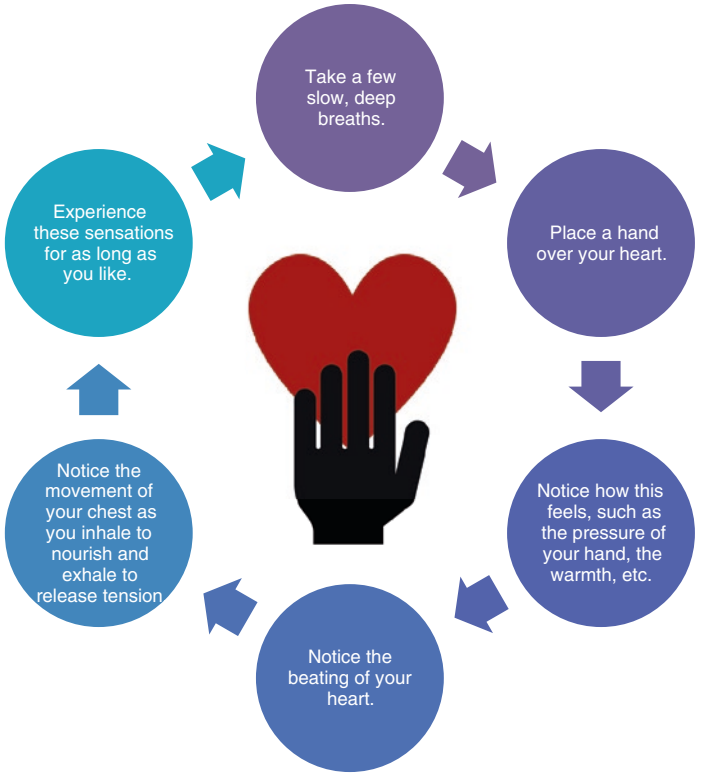


**Fig. 15.4** How to self-soothing with physical touch. (Adapted from [7])

**Did You Know?**

*Similar to the effects of soothing touch from others, engaging in self affectionate touch can trigger release of oxytocin, promoting positive emotions and well-being, and reduces the release of cortisol (the stress hormone) [7, 12].*

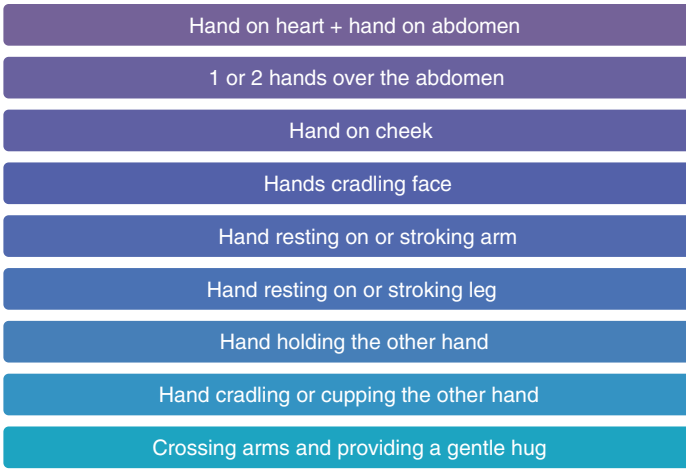


**Fig. 15.5** Alternative soothing self-touch positions. (Adapted from [7])

## Offering Kindness to Ourselves: Loving Kindness Moments

As shown in Chap. 2, the principles of self-compassion include a triad of mindfulness, embracing common humanity, and self-compassion [13]. While the above exercises utilize one or two of these dimensions, loving kindness moments (also known as the "self-compassion break" [7]) is a practice that encompasses all three principles.

Mindfulness here permits the recognition and validation of the hurt and distress that is being experienced, which works to limit judgment and prevent the cycle of rumination. Next, individuals normalize their experiences and emotions, remembering that these can be common experiences that are shared with others, including our colleagues in medicine who similarly experience and understand our stress and struggles. This helps to mitigate the sense of isolation and loneliness that physicians and trainees may experience. Lastly, to foster self-kindness, individuals can offer caring or warm words to themselves, which work to provide comfort and compassion and increase motivation to take positive action. Figure 15.6 provides specific steps on how to carry this out.

Loving kindness moments can be utilized in our daily life whenever difficult or stressful moments arise, which requires no more than 5 minutes of time, making it amenable for those whose time is scarce. This can also be a helpful exercise to practice and feel comfortable with before moving on to some of the more intensive exercises, which will expand on these principles.

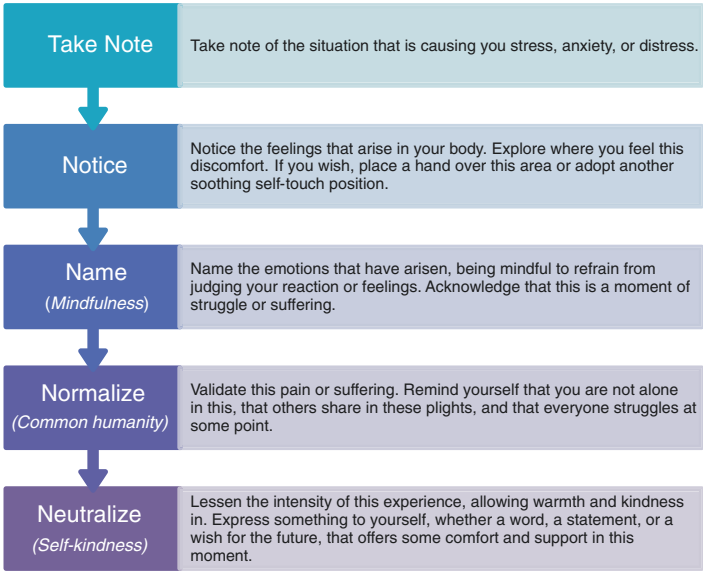


**Fig. 15.6** The 5 N's of daily loving kindness. (Adapted from [7])

**Skill-Building Exercise: Loving Kindness Moments in Action**

**Case Scenario**

Julie is an emergency medicine resident working a shift at one of her city's trauma centers. She is assigned to a patient who presents acutely agitated with an unknown toxidrome that has necessitated physical restraints in

order to obtain necessary vitals and investigations and to maintain safety for both the patient and staff. Despite the use of a low-stimulation environment and Pinel restraints, the patient remains highly agitated. They scream, swear, and thrash about so violently that staff are concerned that the patient may cause injury to themselves or overturn the stretcher. Julie decides that chemical restraint is needed and orders IM lorazepam. While inputting the order into the EMR, she is called to assist with another patient who is crashing, and so hastily finishes the order, during which time she accidentally authorizes double the dose she had been intending. When Julie returns some time later, she finds the patient somnolent and difficult to rouse. She reviews the chart and identifies her error. Julie feels terribly about this. She reports the incident to her staff, files a medical error report, and requests close clinical monitoring for the patient, but remains highly anxious and unable to focus.

If Julie were to practice a moment of loving kindness in this situation, it may look something like this:

1. *Take Note:* Julie identifies that the encounter with this agitated patient in which she made a medical error is what is contributing to her current anxiety and stress.
2. *Notice:* She takes a few seconds to check in with her body. She notices discomfort in the form of tension in her neck and shoulders, as well as in her chest. While at the charting station alone, she places her hand over her heart as a way to ground and soothe herself.
3. *Naming:* Julie recognizes that her reaction to this situation is fueled by feelings of guilt, shame, and anger with herself. Immediately she begins to chastise herself, and all of her shortcomings as a resident flood her mind, which is hard to ignore. She tries to let go of these judg-

ments by visualizing these thoughts being placed on a leaf which floats down a stream and simply reminds herself that it is ok that she is feeling this way, as this is certainly a stressful situation.

4. *Normalizing:* Julie considers other residents she knows and reminds herself that her anxiety and guilt are understandable, as if others were in her shoes, they would likely feel the same. In fact, she recalls that several of her co-residents and preceptors have shared with her stories of medical errors that have been made over the years. This helps her feel less alone and serves as a reminder that she is only human and can learn from this situation to improve patient safety.
5. *Neutralizing:* Julie reminds herself that the error was not intentional and that mistakes can and do happen, despite the best efforts and precautions. She recalls that she is still training, but can use this as a learning point going forward when involved in more high-stress and high-acuity situations requiring her to multitask. She then offers herself a needed wish, repeating to herself, "for this moment, may I have the courage to carry on," which allows her anxiety to quell enough that she is able to refocus on her patients and the tasks ahead.

**Putting It into Practice**

Julie's case is one specific example of how loving kindness moments can be integrated into practice. There are a variety of situations, however, that providers face every day where this practice can be utilized.

Consider now for a moment if there is a situation that you have been sitting with or that has been weighing on you lately. Perhaps this was an event that was stressful, anxiety-provoking, or perplexing. Perhaps this is related to an error or near miss like Julie experienced, uncertainty in a clinical

situation, an adverse patient outcome, or feeling unequipped or lacking time to manage all of the tasks and responsibilities on your plate.

Now that you have the situation in mind, utilize the 5 N's as outlined in Fig. 15.6 to practice using loving kindness here. Afterward, reflect on what this was like for you. Consider whether this helped you to process the emotions that you were experiencing, and if utilizing compassion, rather than criticism, worked to motivate you to continue facing this difficult situation or helped in getting 'unstuck' from it in your mind.

Consider utilizing this practice with ongoing difficult encounters or stressful situations either in the moment if you have time or after when you recognize it is still lingering with you.

*For additional resources and guided meditations, the reader is directed to section "Additional Resources",* Table 15.2.

**Did You Know?**

*Many find the self-kindness component of this practice to be the most difficult, as they ponder and ruminate about the right language or wording of their phrases and wishes for themselves. It is important to remember that the goal of fostering self-kindness is to lessen the harshness and intensity of the thoughts and emotions that have arisen and to provide a needed reminder of what it is that we need at that moment to move forward without getting stuck. What feels right and appropriate will be unique to each person and can change over time based on what it is they need to hear during these moments.*

*Some tips for finding what works include the following:*

- *Using common stems to get started such as "May I …" or "For this moment …"*
- *Consider what you might say to a friend or patient if they were facing the same challenge or experience*

## Reflecting Compassionately on Our Work: CARE Model

Physicians throughout their careers face frequent feedback and evaluation by their supervisors in medical training, colleagues, licensing bodies and regulatory colleges, and patients and their families; however, among all of this input, physicians still tend to be their own harshest critic. Whether by the nature of the culture in which they are enmeshed, or related to certain personality traits such as perfectionism and "obsessionality," physicians are known to be strongly committed to their work, highly conscientious, and set very high standards for themselves when it comes to the care they provide [14]. The problem, however, is that this can lead physicians to begin viewing their work through a narrow and negative lens, through which self-doubt, self-blame, and rumination creep in, making it difficult to let go of work and setting the stage for burnout.

To help combat this cycle, physicians and medical trainees need time and space to reflect on and process their clinical encounters and training experiences, but importantly from a compassionate and growth-oriented perspective. While there is educational value in reflecting on a case to determine how one can improve, taking a balanced approach in which one is gentler with themselves can help reframe one's thoughts in a way that promotes gratitude, relaxation, and the ability to disconnect from work, and boosts mood and self-esteem [15, 16].

While it may seem daunting to consciously monitor for self-criticism and negative cycles of thinking, and to know when to actively intercede, there are a number of simple methods to foster a more compassionate mindset in just a few minutes. One way is


**Fig. 15.7** CARE – Compassionate acceptance and reflection of our efforts

through the CARE model, developed by Drs. Tara Riddell and Ana Hategan. This is a four-step checklist, based on the positive psychology literature, which suggests that adopting a 1:3 negative to positive emotion ratio is most ideal for promoting wellness [15]. As outlined in Fig. 15.7, these four quick steps can be done in just 1–2 minutes. Together, they offer (1) a moment of grounding; followed by (2) acceptance of what was difficult, and acknowledgement of what went well or for which one is grateful; (3) enacting compassion and care for both the provider and involved colleagues; and lastly (4) planning for self-care after one's shift or day.

**Skill-Building Exercise: CARE**

**Case Scenario**

Megan is a surgery resident who just finished what felt like an incredibly long day. She feels exhausted and disheartened by the day's events, which involved a few adverse outcomes including a patient who died from a postoperative complication and another patient who was badly injured in a car accident, whom her team had tried to save during a trauma surgery, without success. All day Megan has been replaying the surgeries and her encounters with these patients, wondering over and over again whether she could have done something differently to result in a better outcome. Usually, after leaving work Megan would head home, her mind still on work and questioning her decisions and skills. Today however, just before she leaves the learner lounge, she notices the CARE checklist, which is hanging on the back of the door.

Intrigued, Megan decides to give this a try. She takes a few deep breaths in and out, notices her feet firmly in contact with the ground, and then reflects back on the day acknowledging that this was a hard day for everyone involved, including herself, her patients and their families, and others on the team.

Using the 1:3 rule, Megan next considers the most challenging part of her day, which was informing a patient's family that their loved one had passed away due to a complication from a surgery they had thought would permit them to live an otherwise long and healthier life. While Megan has been stewing in self-blame all day about this, she tries to reflect on this compassionately by reminding herself that despite the team's best efforts, such complications and adverse outcomes can happen and that they did their best in caring for this patient. Megan acknowledges how difficult it was to provide bad news to the family and

considers that next time she may take a few minutes to settle and soothe herself first so that she can be strong and present for the family. Though it is challenging to do so, Megan then lets these ruminating thoughts go, and moves on to focus on some of the positives of the day, which she finds more difficult than she initially expected. With some time, however, she is able to identify that she was pleased with her performance in a surgery today, acknowledging that her hours of studying had paid off as she was calm and focused, and received positive feedback from her supervisor. She also feels gratitude for the nurses, who provided close patient care and informed her as soon as they noted that one of her patients was declining, as well as her supervisor who noticed how upset she was after they provided bad news to the family today and offered to debrief with her. It was such physicians that inspired Megan to study medicine, and whom she strives to emulate when she becomes staff in a few short years.

In considering her colleagues, Megan thinks about one of the medical students who seemed quiet and withdrawn at the end of the day. Megan finds them before she heads home and checks in with how they are doing. The medical student discloses that this was the first time they encountered a patient death, which is weighing quite heavily on them. Megan spends a few minutes debriefing with the medical student and offering support, which is well received. They are able to share in this human experience together and both feel a little lighter as they leave the hospital. Megan considers what it is that she needs when she gets home to recuperate from the day and agrees to set some time aside for a hot bath and quality time with her partner before returning back to the books.

**Putting It into Practice**

This is one example of how the CARE model can be integrated into a physician's busy day. Whether during lunch,

between cases, or at the end of a call shift or day's work, these four steps require only a few minutes to offer some valuable compassion to ourselves and those around us, yet can have a lasting effect.

Give this a try on your next shift, or even now if the day's events are still weighing on you.

## Kicking It Up a Notch: Intensive Self-Compassion Interventions

For those who remain interested in self-compassion, or wish to deepen their practice moving beyond informal interventions that can be done on the fly, there are several comprehensive practices that can be useful in this regard. These practices offer more advanced techniques, building on the informal exercises and meditations learned in the previous section. The formal practices address painful emotions such as anger or shame. They provide support in managing the most seemingly difficult or insurmountable experiences, such as those common to the healthcare provider who is searching for that tenuous balance between their own needs and those of others.

While there are many formal practices and guided meditations available, this section will provide exercises and practices that may be particularly useful to the perfectionistic and altruistic physician. We recommend reviewing the recommended resources listed at the end of the chapter for those who remain curious and interested in further building their toolbox of self-compassion practices (See section "Additional Resources", Table 15.2).

## Fostering Deeper Love for Ourselves: Written Compassionate Expression

Many individuals have kept a journal at some point in their lifetime, in which they chronicled the days' events or shared their innermost feelings and secrets. Though years later some may

laugh or roll their eyes at the content of their entries, in the moment many would likely attest that there is something enjoyable and beneficial in this form of self-expression. Perhaps this may be having a release for difficult emotions, such as anger, or feeling less alone and less burdened by what is troubling them. While the utility of journaling may not have been well understood in the past, there is now ample evidence to support the therapeutic nature of this form of written and emotional expression. Specifically, with regards to wellness, writing for personal benefit can help an individual become "unstuck" through processing challenging or distressing situations, offer validation and acknowledgment of an individual's deeper feelings, and help them to construct a meaningful narrative of these events [17].

These benefits of written expression can be further amplified by integrating self-compassion. While this can be specifically achieved through various exercises, as will be explored below, utilizing the three principles of self-compassion in the form of writing can soften the intensity of the self-critical voice, in addition to offering some much needed and often-forgotten soothing and validation. Self-compassion through the use of common humanity also furthers a sense of community and provides comforting reassurance that no one is alone in these experiences, helping to mitigate the imposter syndrome.

The first method of written compassionate expression is in the form of compassionate journaling. This entails writing a narrative about a difficult or challenging experience. Examples may include the death of a patient, becoming frustrated and terse with a colleague when running a difficult code or managing a critical care situation, or feeling angry or upset when a patient became hostile and aggressive. Typical journaling often consists of documentation of the details of the situation and documentation of the emotions that arose in the context of this event. (See Chap. 14, *Healthy Habits: Positive Psychology, Journaling, Meditation and Nature Therapy*, for further details on journaling.) The application of self-compassion involves additional steps, as outlined in Fig. 15.8, to lessen the voice of the self-critic, to normalize and validate the experience and resultant reaction, and to help one effectively process and move forward by considering what is needed in order to do so. (See Chap. 14, for further details on journaling.)

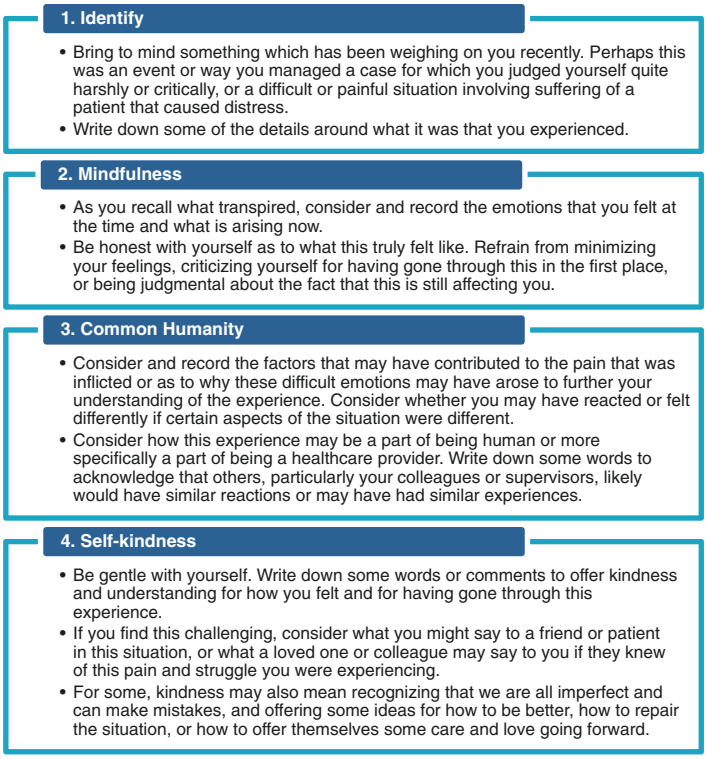


**Fig. 15.8** Four steps to compassionate journaling. (Adapted from [7])

**Skill-Building Exercise: Compassionate Journaling**

Give *compassionate journaling* a try! Obtain a notebook and try, even for just 1 week, keeping a self-compassion journal. Spend a few minutes prior to going to sleep, reflecting on the day's events. Consider stressors arising from the rigorous training and responsibilities on your plate, or challenges that arose clinically with the patients you are caring

for or during the course of your training. Use the steps from Fig. 15.8 to process this event or situation that continues to sit with you or is causing some degree of distress or discomfort.

After completion of your journal entry or upon reviewing it a few days later, reflect on the following questions:

- What was this experience like for you?
- How often did you notice your self-critic arising? How difficult was it to refrain from feeding this criticism?
- What did you notice when journaling or when re-reading your entries?
- How did this affect your emotions or the way in which you managed these difficult situations?
- After journaling on a few occasions, do you notice your critical voice lessening?

Another way of engaging in compassionate written expression is through the form of writing a compassionate letter to oneself. In this case, there is no necessity to focus on a troubling situation, but rather more broadly on one's own perceived insecurities and inadequacies. For resident physicians, it is not uncommon to become highly focused and ruminative on one's perceived weaknesses or failures, leading to perceive the self as not good enough, classic of the *Imposter Syndrome* [18]. Often this then evolves to feeling alone in one's struggles and becoming disheartened and disempowered in one's work, which can drive avoidance, cynicism, and ultimately burnout [18].

As such, compassionate letter writing can offer a provider the opportunity to view themselves – both strengths and weaknesses – from a warm and loving perspective offering both forgiveness and acceptance. This is important to ongoing work in healthcare and effective overall functioning in life, as it helps to instill motivation and encouragement in moving forward and to bettering oneself. While the ultimate goal in fostering self-compassion is to be able

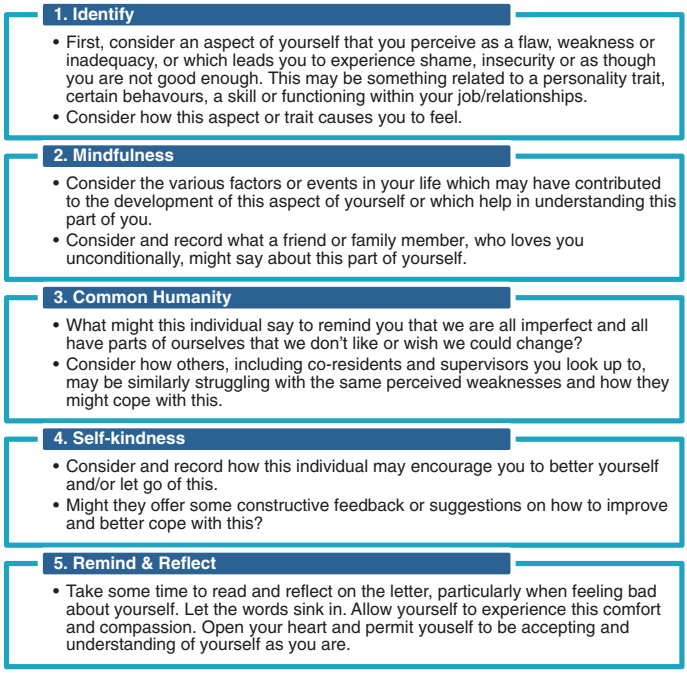


**Fig. 15.9** Steps to writing a compassionate letter to oneself. (Adapted from [7])

to write such a letter using one's own compassionate voice, early in the practice this can be challenging. As such, for beginners, it can often be helpful to write a letter to oneself from the perspective of a close friend or trusted loved one. Figure 15.9 outlines the steps on how to craft a compassionate letter.

**Skill-Building Exercise: Compassionate Letters**

Give *compassionate letter writing* a try! Whether on paper or using your computer, when you notice that you are feeling particularly poorly about yourself, are being overly critical, or fixating on a perceived negative aspect of yourself, try writing a letter using a compassionate voice

(whether your own or that of a supportive friend, colleague, or loved one) using the instructions from Fig. 15.9.

After completion of your letter, read and reflect upon it. Make sure to hold on to this letter, as when other difficult times arise or when you again notice that critical voice rearing its head, it can provide you an opportunity to receive some needed compassion and remind you that you are cared for, valued, and that there will always be ongoing opportunity for personal growth.

Consider also reflecting on these questions:

1. What was this experience like for you?
2. What did you notice when writing your letter and when re-reading it afterward?
3. How did this affect your emotions and the way in which you understand and value yourself?
4. Did you notice over time that you were more easily able to accept and receive this compassion?

## Balancing Kindness for Ourselves and Others as a Healthcare Provider: Giving and Receiving Compassion, and Compassion with Equanimity

Physicians devote their lives to caring for patients at some of their most vulnerable times. This requires various skills and knowledge, along with empathy as one of the most important and valuable physician characteristics. Empathy enables physicians to establish vital connections with their patients. This allows a physician to develop an understanding both of patient experience, which often involve pain and suffering, and of the meaning that this pain and suffering holds for them. A physician works to understand a patient's pain by putting their own feet into the patient's shoes. This is also known as emotional resonance, a process which not only leads to an affective response but also promotes hardwiring

changes within one's own neural networks [19]. For instance, studies have now uncovered that when one learns of another's pain, this stimulates the same brain circuits and regions as if they were the one directly experiencing the pain themselves [20].

As a result of this, physicians can take on much of the pain and distress that they are witness to, which can lead to empathic distress or empathic fatigue. With *empathic distress*, providing or experiencing empathy for another can trigger discomfort or stir up one's own distress related to previous memories, fears, or uncomfortable experiences [21]. *Empathic fatigue,* on the other hand, describes when providers feel drained and exhausted as they have continually and repeatedly experienced others' suffering, which can become overwhelming and challenging to bear [21]. In either case, over time, providers may turn away from the discomfort as a way to cope and in an effort to reduce their own suffering. This can take various forms. One way physicians do this is by focusing predominantly on fixing the patient's problem, rather than understanding the patient's experience and attuning to their needs [7]. Another way is by creating boundaries with patients, which interferes with the physician's ability to attentively listen and provide effective care [7]. This problem is often further compounded by the culture of medicine and healthcare systems which fail to provide essential time and space for providers to process and debrief traumatic or difficult encounters and to engage in self-care, which is one of the modalities to refuel and recharge.

So how then does one address empathic pain and suffering when it arises for the benefit of both the physician and their patients? One possible solution is compassion, which has subtle but important distinctions from empathy and sympathy. While sympathy says, "I feel *for* you" and suggests that one is feeling sorrow or pity for another at arm's length, empathy says, "I feel *with* you" and connotates a deep understanding of another's situation, such that one is feeling together with the other individual [22]. Compassion shares with empathy the elements of recognizing and relating to another's pain and suffering, but differs by the presence of a reaction to this suffering and a desire to relieve it

[22, 23]. Compassion says, "I'm *with* you and I *hold* you," with an offering of tenderness, support, and encouragement that are needed for one to have the courage to take action to face these challenges in a way that is not draining, but rather maintains our well-being [24].

As such, compassion can serve as an antidote to empathic distress and fatigue. By providing compassion first to the provider (akin to a parent putting on their own oxygen mask prior to helping a child with theirs), they are able to attune to their own need for comfort and support that builds and fuels their own capacity to comfort and support another. In addition, by the same process in which one's brain reacts to the experience of another's pain via emotional resonance, so too does the same process occur for patients when a provider is able to attain, experience, and express inner kindness and calmness.

**Did You Know?**

*The experience and practice of empathy versus compassion affect different networks of the brain. A study examining this found that empathy training was associated with activation of the insula and anterior middle cingulate cortex and increased reported negative affect and withdrawal. Conversely, compassion training was associated with activation of ventral striatum, medial orbitofrontal cortex, and nucleus accumbens, as well as increased reported positive affect and prosocial behavior [25].*

Consider the exercise "Giving and Receiving Compassion," outlined in Fig. 15.10. This can be conducted as a formal meditation lasting 15–20 minutes, in which we consider an individual, such as a patient who is struggling or suffering and could benefit from compassion.

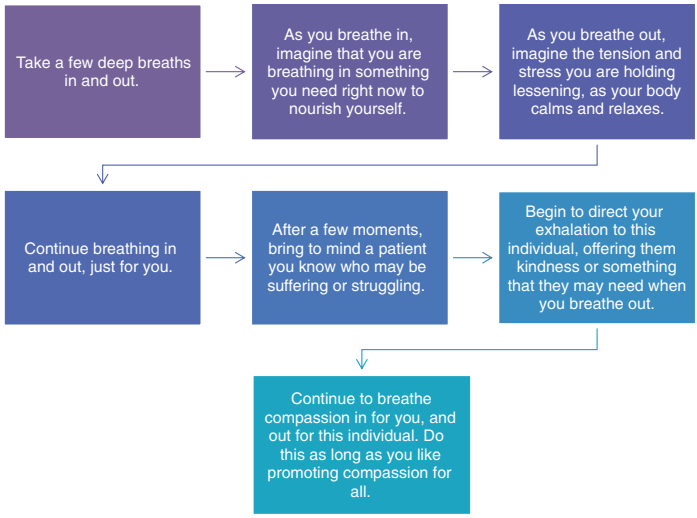


**Fig. 15.10** Offering compassion to both the provider and patient . (Adapted from [7])

### Skill-Building Exercise: Giving and Receiving Compassion

**Case Scenario**

Jack is an obstetrics and gynecology resident. He is working in a busy prenatal clinic and has follow-up with a patient who is now in her third trimester and nearing her delivery date. Jack has met with this patient before and found their previous interactions quite difficult. The patient is considered high-risk given her age and other comorbidities, and is highly anxious about delivery and the welfare of her baby.

During their encounter today, Jack notes that the patient remains highly anxious, voicing worry after worry, leading her to become tearful and distressed. Jack catches himself becoming distracted and disconnected from the encounter. Instead of distancing himself from the patient's suffering

and tuning out for the rest of the visit, solely offering education like he did previously, he tries focusing on his breath. With every inhalation he offers himself patience and compassion, and then begins to direct his exhalations to this patient offering her calm and kindness.

In doing so, Jack begins to notice his body relax and finds that he is able to feel more connected with the patient. He is able to listen more attentively to her concerns and experience not only empathy for her situation, but also compassion in which he actively wants to help ease her anxiety. Jack offers genuine and warm validation and support, and while there remains some uncertainty around the risks and outcomes of delivery, the patient also calms and feels reassured by Jack's presence and approach.

**Putting It into Practice**

In this case, Jack was able to use the *Giving and Receiving Compassion* practice during an encounter with a patient who was suffering and overwhelmed. Consider giving this practice a try the next time you are in a difficult encounter with a patient or colleague, or even in a moment of quiet or solitude while considering a patient with whom there may be residual tension or countertransference.

*For additional resources and guided meditations, the reader is directed to section "Additional Resources",* Table 15.2.

Another way in which compassion can be generated for both the physician and others (such as a patient or colleague) is through the practice of "Compassion with Equanimity" [7]. This can be particularly effective in coping with a caregiving situation that is stressful, exhausting, or frustrating. Consider, for instance, the patient with unexplained medical symptoms who repeatedly presents for care demanding a more intensive work-up, or the family

member who becomes hostile and threatening as they disagree with their loved one's care, or a colleague or supervisor who projects their anger onto another. In any of these cases, this exercise can help one to maintain calm and composure, to adaptively process the emotions and countertransference that may emerge, and to refrain from internalizing this experience as being suggestive of one's own shortcomings or failures. It helps to compassionately recognize the suffering experienced by both parties and also provide a fair and realistic reminder of what is still within a provider's capacity to do to help. Similar to the previous exercise, this practice can be conducted informally during challenging clinical encounters as outlined in Fig. 15.11, or more formally during an extended meditation, which can be found using the recommended resources in section "Additional Resources" (Table 15.2).

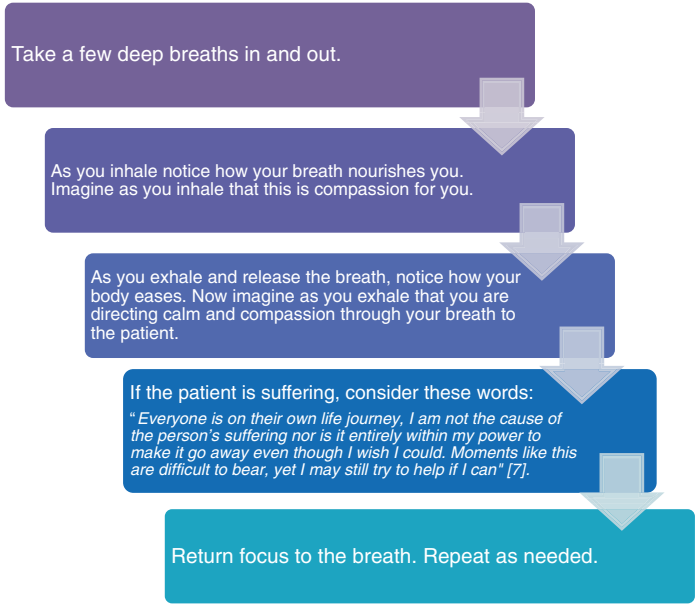


**Fig. 15.11** Offering compassion with equanimity to both the provider and patient . (Adapted from [7])

**Skill-Building Exercise: Compassion with Equanimity**

**Case Scenario**

Ben is a family medicine graduate who is completing an extra year of training in emergency medicine with plans to work in a rural ER in the future. During one of his shifts, he meets a patient with opioid use disorder. After spending some time conducting an assessment, Ben learns that the patient had first began using pain killers after a car accident resulting in chronic myofascial pain. Over the years, however, they built up tolerance and began misusing the medications they had been prescribed, eventually leading them to purchase opioids off the street. This substance use has resulted in the patient losing their job and becoming estranged from their family. They ran out of money recently and as such could not afford to purchase these medications. The patient presented to the ER with the beginning signs of opioid withdrawal and is requesting a prescription for narcotics.

Ben listens attentively to the patient. He can see how uncomfortable and upset the patient is, and how addiction has ravaged their life, which he empathizes with. He advises the patient that he is unable to provide a prescription for narcotics, but instead he offers a variety of options and supports in lieu of this such as starting methadone or buprenorphine/naloxone, referral to a monitored detox unit or rehabilitation facility, or connections to other substance use programs in the community. The patient becomes increasingly upset by Ben's refusal to provide a prescription and opts to leave the ER.

Ben is left feeling disheartened and deflated. He had previously worked in an addiction medicine clinic and is aware of how devastating addiction can be and how few resources there are to help those in need. The patient's words and disappointment replay in his mind and he wonders whether he let this patient down and whether there was more he could have done. He notices this encounter greatly weighing on

his conscience and decides to spend a few moments compassionately reflecting on this.

Ben spends a few moments centering himself using his breath. With every inhalation, he offers some kindness to himself, which helps to gently soften and soothe the recent uncomfortable memories, and with every exhalation, he works to release some of the tension he has been carrying. He then brings to mind the patient he just met with and directs some compassion with his outbreath to them. He reminds himself that he was just a moment in this patient's life and that he is not at fault for this patient's suffering. Ben reflects that he wishes he could have helped the patient and eased their struggles, but that sometimes it is not within his power to do so. He acknowledges that this was a difficult situation for both he and the patient, and in the future, he will continue to the best of his ability to help others when he can.

By spending a few moments engaging in this practice, Ben is able to diffuse the difficult emotions that had arisen, remind himself of what he is and isn't capable of as a physician though he remains caring and empathetic to all patients he meets. He is able to refocus and move forward compassionately for the remainder of his shift.

**Putting It into Practice**

This is one example of how the "Compassion with Equanimity" practice can be put into place. As with Ben, this exercise can be done following a difficult encounter with a patient or a colleague, and can even be utilized in the moment. The next time you experience a challenging encounter that leads you to feel disempowered or to question your own abilities, consider trying out this practice.

*For additional resources and guided meditations, the reader is directed to section "Additional Resources",* Table 15.2.

## Self-Compassion in the Toughest Moments: Finding Silver Linings

There are challenging times that physicians face which can feel insurmountable. Perhaps this was a time in which, despite all the best efforts, the end result was not what had been hoped for or expected, or when failure was experienced, or when the obstacles standing in the way of a goal seemed too mountainous to overcome. Medicine can be a minefield of such barriers and experiences: the process of getting into medical school, the residency matching process, trying to meet all program and systems demands, attaining that "perfect" work-life integration as a staff physician, and trying to save and support every patient despite the odds. These experiences can feel defeating, and difficult emotions often linger long after the event, serving as unkind reminders and promoting the illusion that to attain this a provider must work harder, do better, and be stronger. Failing to succeed in these endeavours risks perpetuating self-blame and shame, and provoking negativity, cynicism and ultimately burnout.

So, the critical question is this: is there an alternative approach to help physicians better cope with such losses and obstacles? The answer, unsurprisingly, is again self-compassion. Compassion during these moments can work effectively to ease the resentment and shame that are often experienced during these difficult memories and situations. Being gentle and kind with the self opens the door for appreciation to enter. This in turn can offer a reminder of one's strengths, promote gratitude for the hardships, and allow encouragement and motivation to be found, helping the individual to get up after they've fallen and try again.

One way to practice this is through the "Silver Linings" exercise [8], as outlined in Fig. 15.12. This exercise brings to mind situations, either from the past or those which one is currently facing, which feel overwhelming and nearly impossible to overcome. By exploring these experiences from both a self-critical and self-compassion lens, one will learn how judgment and resentment may fuel ongoing pessimism and hopelessness, while self-compassion can promote positivity, unearth valuable lessons

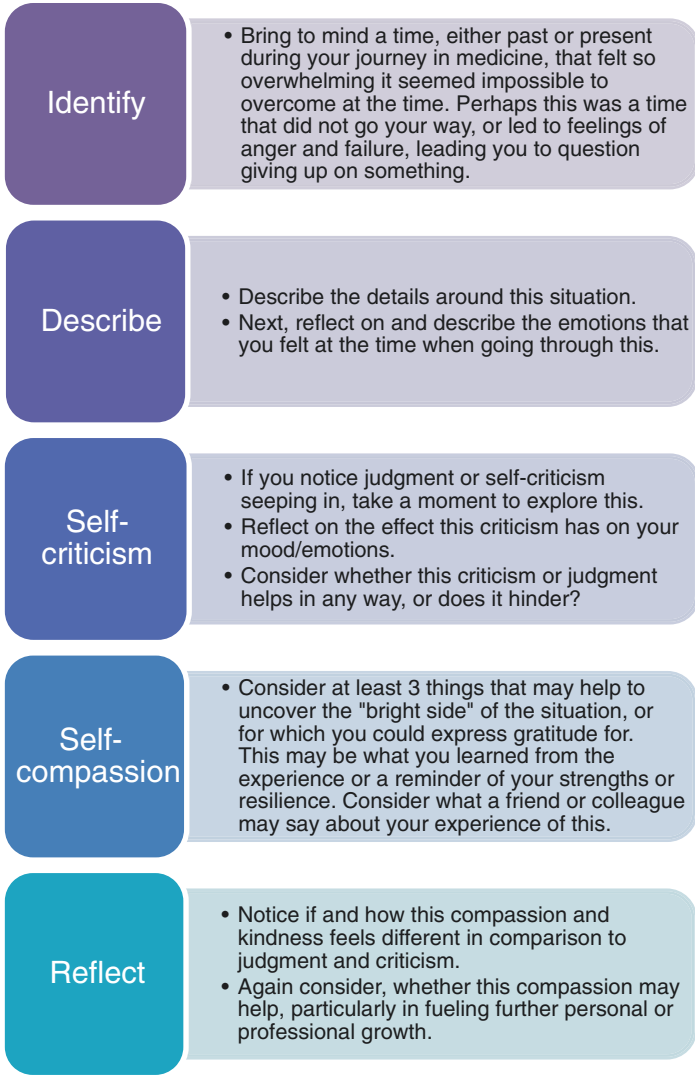


**Fig. 15.12** Diamond in the rough: Uncovering those hidden silver linings. (Adapted from [8])

learned during the hardship, and empower one to continue learning and growing.

**Did You Know?**

*The #failforwardcampaign began in 2018 by Dr. Aleah Thompson, a family medicine resident, when she shared her own failures during medical training as a way to demonstrate to others that failure is in fact normal [26]. Her message serves as a powerful reminder that one is not defined by their failures, but rather by how they respond in the face of adversity. The campaign involved medical trainees and physicians sharing some of their failures, mistakes, or most difficult moments, but more importantly the stories of how they overcame these obstacles and used these as a catalyst to become better.*

## Rolling with Resistance: Troubleshooting Obstacles to the Practice

As with any lifestyle change or form of therapy/treatment, there can be challenges in applying new practices and behaviors and integrating them into one's routine and daily life. For some, this may arise in the form of mental blocks or fixed beliefs, side effects, or negative reactions and experiences. For others, the obstacles may be related to environmental factors. Regardless of the cause, the key in overcoming these barriers involves first recognizing when they are present and impeding progress, and then engaging in problem-solving to address the root problem.

Self-compassion is no different. Though it may seem straightforward, requiring only a sense of self-awareness, commitment, patience, and practice, resistance can still rear its ugly head and interfere with the process and ultimately one's personal and professional development. In this section, the common barriers to self-compassion interventions will be reviewed with suggestions to troubleshoot these difficulties.

## "Who Needs Self-Compassion Anyways?"

The concept of self-compassion is unfortunately sometimes associated with negative connotations, such as being considered unnecessary or a sign of weakness [27]. These beliefs can be limiting, however, and can lead to avoidance of the practice entirely, its' benefits being unfairly minimized, or stigmatizing of others who vocalize or practice the benefits of such approaches.

In response, how can such negative attributions be addressed? For the skeptics, it can be helpful to consider a time recently where you were facing a difficult or stressful situation or really struggling. If you are having a hard time bringing such an occasion to mind, imagine for instance one of these two scenarios:

1. One of your patients who you have known for some time and have been caring for over the past several weeks passes away. You experience grief and sadness over this, and wonder if there was something more you could have done to prolong their life. This is compounded when you learn that a complaint was lodged to the medical college by the patient's family about the care that you had provided.
2. For several months you have been experiencing bullying by a colleague, involving repeated verbal put-downs. You have tried to address this with the individual directly, but this resulted in escalating shaming and ostracization, making your work environment a very uncomfortable and distressing place, and leading you to feel hopeless, particularly as you don't feel safe disclosing this to others in the department and in seeking further support.

In all of these situations, real or imagined, you as the physician are experiencing significant stress, emotion, and pain, with no clear or immediate solution. The struggle is real, and so you reach out to a loved one or friend for a shoulder to lean on in your moment of suffering. Now, imagine this trusted individual offers one of two responses:

1. They are cold and uncaring, invalidating and minimizing of your experience. They might say something along the lines of "Well what did you expect? You knew what you were getting yourself into when you chose this profession. Just get over it! There are bigger problems going on in the world!"
2. They listen attentively to your story, and then offer warmth, validation, and understanding. They might say something like "I can't imagine what this has been like for you, this must be so difficult. Is there anything I can do to help? Know that I am here for you anytime you need, I believe in you and know you're a worthy person, a capable physician."

Which individual would you want to speak to and would like to have in your corner during this difficult time? Looking at it from this perspective, the choice is likely clear, with a preference for having individual #2 coming alongside. Even though this individual may not be able to directly help us fix the problem, their attentiveness, kindness, and offering of genuine concern and empathy is meaningful. It provides a reminder that one is loved and worthy, and perhaps a sense of hope that one will eventually get through this.

So why then should the choice be any different when it comes to how one speaks to themselves? Just like one would choose the compassionate friend, one should also choose the compassionate self who helps to acknowledge our struggles and distress, and then offers kindness to enable adaptive coping, learning, and progression forward.

## "Self-Compassion Will Not Motivate Me!"

For those of who have become accustomed to being tough on themselves, another barrier may be the belief that this toughness or strictness is vital to one's intrinsic motivation and productivity. Without it, and should self-compassion replace this self-criticism, they believe they would become complacent, lazy, and unmotivated.

So how does one address this? Consider the concept of the "carrot vs. stick". Imagine you have a mule, upon which you

depend for transportation. There are two ways you could lead the mule in completing this work, either you beat it with a stick or you entice it with a carrot. Let's explore this further:

A. In the first scenario where you use the stick, though the mule may carry out the tasks that you demand, over time it becomes bruised and battered, and likely unhappy and tired. The stick, while motivating, is actually a punishment if they fail to do the job. In the future this risks task avoidance or becoming less efficient, causing a vicious cycle of escalating stress and physical toll.
B. In the second scenario, the mule still achieves the goal, but it is fed, healthy, and happy. The carrot in this case serves as positive reinforcement, works to motivate and excite the mule, and perhaps keeps it focused and more productive.

Back to oneself now, considered in lieu of the mule, with self-criticism as the stick and self-compassion as the carrot, one can begin to see that self-compassion is motivating in a different and arguably a more adaptive and healthier way.

## "Self-Compassion Sounds Exhausting; It Will Add to My Burnout!"

Physician work in healthcare is undeniably challenging. Physicians and medical trainees spend countless hours meeting with patients, actively listening to their concerns, completing various administrative tasks, and providing support, all to provide individuals and communities with the best care possible.

In this regard, empathy and commitment to care can lead physicians to dip deeply into their own resources and reserves such that they are able to meet system demands and go above and beyond for patients. Over time, and particularly if taxed beyond their means, physicians can end up feeling exhausted and depleted, ultimately placing them at risk for empathy fatigue and burnout. Once in this state, the idea of subsequently taking time to empathize with themselves in the practice of self-compassion and self-

care may seem daunting and counterintuitive to restoring wellness. Some may wonder, won't this practice require more effort and time overall, and so further the depths of exhaustion and burnout?

So how does one address this? Consider the idea that each individual has an internal tank, like that of a car, which represents their capacity to be well and to function both in our personal and professional life. Each day, just like a car when it is in use, the gas levels gradually decline as one exerts themself and goes about their various tasks and duties. In their roles as healthcare providers and educators, the effort invested in caring for others also leads these levels to decline, despite the fact that physicians and trainees may hopefully reap some meaning and satisfaction from doing so. Over time, if one does not stop to refuel, this can result in feeling drained and running on empty, which sets the stage for burnout.

One of the keys to addressing burnout is to ensure that one is regularly refilling their tanks. While this can come in different forms such as getting a good night's sleep, or visiting with friends, self-compassion can also help to recharge and in this sense can be considered an antidote to burnout. Failure to engage in self-compassion means one's tank continues to empty and the judgment and isolation one experiences as a result can lead the tanks to empty at a faster rate. In other words, self-compassion changes the way one relates to our challenges – so those same challenges (of residency, or otherwise) may stay the same, but they are not able to deplete with the same velocity or to the same depth or for as extended a time.

While no tool or practice to combat burnout should ever feel onerous, self-compassion offered in the right dose and adapted to an individual's unique needs can in fact be one of the tools to mitigate burnout, helping to replenish and refill a physician's tank to enable their own health and well-being while they care for others.

## "It Does Not Feel Right, I Feel More Uncomfortable When Doing the Practices"

While engaging in self-compassion exercises or therapy, individuals may discover that in doing so they experience increased dis-

comfort or distress. This is referred to as "backdraft." Backdraft is a term originally coined by firefighters in describing the worsening or intensifying of a fire when a window or door is opened/broken down allowing oxygen to enter the space that's ablaze [28].

When administering self-compassion or when in therapy, one's heart (which has been tempered in the fire of all the hurts from the past) opens. Kindness, like oxygen, flows in. Similar to a real fire, this can trigger backdraft, as the kindness and openness can lead to re-experiencing old hurts, which results in worsening of the blaze and increasing feelings of pain or upset [7].

So how does one address this? Backdraft can be uncomfortable, but it should not be a feared part of this practice or of formal counseling or therapy. In fact, many who facilitate self-compassion programs consider it a healthy part of the therapeutic process and as a "compassionate exposure" [29]. In considering it with this lens, backdraft may help one to begin to recognize and process this former pain and anxiety, lessening their power to hurt and, in time, lessening their hold on one's heart and mind.

Backdraft, however, can be overwhelming and can lead one to feel unsafe in the moment. As such it is helpful to be aware of it when it occurs and consider what is needed in that moment and what one is able to cope with at that time. As such, here are a few strategies to use when experiencing this phenomenon [7]:

1. Notice without judgment and let it be. Backdraft may dissipate on its own.
2. If the backdraft is particularly intense, reduce or step out from the practice you are engaged in. Consider returning to more brief and informal practices, slowly building up your capacity to experience this and tolerate the uncomfortable emotions.
3. Return to the basics of mindfulness and ground yourself in the present moment or engage in an activity you take pleasure in.

## "I Cannot Seem to Get into the Routine"

As with most things, self-compassion is most effective when, if even just briefly, it is practiced consistently. It can be challenging,

however, to get into the habit of self-compassion. This is not uncommon, particularly in medicine the default mode has been set toward finding faults, pointing out mistakes or shortcomings, and engaging in self-blame, particularly when worried, stressed, or struggling.

Consider the idea of a mental forest. The path of self-criticism has been well trodden for years, meaning that the walk is smooth and quick, although it does not always result in arrival at the desired destination. Self-compassion, however, offers us a new and more enjoyable place to visit, yet the path to get there, as it has not often been traveled upon, is unchartered territory which is overgrown and uneven. It may initially take longer to reach the desired destination using this new path; however, the more one takes this route, the smoother and quicker this path becomes. Meanwhile, the old path to selfcriticism begins to grow in, making it less accessible.

So how does one address this?

1. Be patient; though physicians have a tendency to strive toward the illusive ideal of "perfection" and quick mastery of skills, development of self-compassion can take time.
2. Start slow and be realistic about what you are able to integrate into your schedule. Perhaps start with more brief and informal practices, which only require a few moments of your time.
3. Set "SMART" (Specific, Measurable, Attainable, Relevant, and Timely) goals for yourself, aiming for a few minutes per day of practice.

**Key Points**

- There are several ways that resistance can arise when practicing self-compassion.
- Though resistance may seem to help in the short term, in the long term it can perpetuate suffering and lead to ongoing unhelpful behaviors and responses, such as avoidance.

- In encountering obstacles while practicing self-compassion, one question that may be helpful to explore is how self-criticism may help or hinder in comparison to self-compassion.
- Backdraft can be an overwhelming experience in which pain and distress can intensify as one invites in self-compassion. This is a normal part of the process and can be addressed either by acknowledgement or by toning down our practices for a time to better allow coping and adaptation.

## Check Your Learning

### Case Studies

#### Case I

Jeff is an internal medicine resident in his first year of training. In medical school he enjoyed his internal medicine rotations, particularly as he loved the wide variety of presentations and cases, as well as being directly involved in both acute crises and chronic disease management. He also really appreciated the abundance of teaching by staff and residents and has interests in pursuing medical education himself as he becomes more senior.

Now in his first year, Jeff has found the transition to residency to be more challenging than he anticipated. He is overwhelmed by the amount of material he feels he needs to know, particularly as he prepares to become a senior resident in a few months. He feels pressured by his seniors and preceptors, who frequently pimp him and challenge his medical reasoning, which amplifies the pressure Jeff already places on himself and intensifies his fears of making a mistake or the wrong decision.

During one call shift on his clinical teaching unit rotation, Jeff is asked to see a patient in the ER who appears to have congestive heart failure. He meets with the patient, conducts a thorough assessment, and feels confident in his management plan. While

reviewing with the senior resident, however, they note some subtle abnormalities in the patient's bloodwork that Jeff had not considered. The senior resident educates Jeff about this, advising him that this particular pattern of abnormalities can be suspicious for a form of leukemia; given this they should be conducting further investigations to rule this out. Jeff feels beside himself and is overwhelmed by guilt and sadness at having overlooked these findings.

***Question.*** **How might Jeff handle this situation with a self-compassionate approach as opposed to a self-critical approach?**

A. **Jeff spends the rest of his call shift replaying the encounter in his mind, questioning himself and his abilities, and fixating on all the possible errors and ways he might have failed the patient.**
B. **Jeff recognizes that he is feeling overwhelmed and upset by the situation. He reflects that what he needs right now in order to stay focused and get through the next few hours are taking a few minutes to himself and going for a walk. He gives himself permission to take this time and heads to the cafeteria for a coffee. On the walk there he practices mindfulness by focusing on the soles of his feet.**
C. **Jeff takes some time to reflect on the struggle and stress that arose from this situation, recognizing that his reaction and emotions are normal and understandable given the circumstance. He also reminds himself that this was a difficult and advanced diagnosis to recognize especially at his level, and many other residents likely experience the same doubt when they feel they have made a mistake or have missed something. He thinks of what his partner may say to him, "that this was a tough situation, that we're only human and can't know everything." Jeff reminds himself that he works very hard,**

**cares deeply for his patients, and there is something he can learn from this situation going forward.**

**Answer: B and C ✓**

*While answer A may be the typical knee-jerk response for most medical trainees when such a situation arises, this is reflective of self-criticism. Likely this response would promote feelings of worthlessness and ineptitude and could eventually amount to Jeff experiencing shame as he suspects that no one else in his cohort would have made the same mistake.*

*Answers B and C however are more suggestive of a self-compassionate approach to the situation. In answer B, Jeff utilizes a combination of a "Self-Compassion Break" and the "Soles of the Feet" mindful grounding exercise in the moment. This helps to provide him with some mental distance from the event and to help diffuse and lessen the intense distressing emotions he experienced. By giving himself permission to take a quick break for a coffee, he demonstrates some kindness to himself and his needs, and maintains his focus and presence for the remainder of the shift.*

*Similarly, answer C demonstrates aspects of "Loving Kindness Moments," "Silver Linings Exercise," and the utility of considering a compassionate friend. While this response could be done in the moment, this could also be a helpful practice to engage in when Jeff has more time after his shift and if he notices the situation still weighing on him. Providing himself with self-compassion and processing the difficult emotions and thoughts related to the situation also create space for Jeff to be able to see this situation as a learning opportunity and part of his growth as a junior physician, rather than a personal failure. In choosing answer A, in many instances one can become "stuck" in self-criticism and miss the opportunity for learning and growth.*

## Case II

Lucy is a fourth-year psychiatry resident who has been spending the last few months working on a family health team. She has been closely following a patient in particular who is at high risk, given a history of impulsivity and several previous suicide

attempts, with features of anxiety and borderline personality. While the patient has been fairly stable from a mental health standpoint with close ongoing support, Lucy has come to dread her encounters with this patient as they often spend at least an hour at each visit rehashing all of the patient's current and ongoing stressors. Lucy finds the patient highly demanding, as she repeatedly and frequently requests medication changes and referrals for more intensive support, in which she subsequently fails to engage; yet, the patient ultimately blames Lucy for the ongoing struggles. Lucy meets with the patient again today. She feels drained and frustrated, and at a loss for how best to further support this patient, leading to feelings of worthlessness as a psychiatrist.

***Question.*** **How might Lucy respond to this situation using self-compassion?**

A. **Tune out the patient as it is too exhausting and uncomfortable to share in their distress. They don't listen to the solutions Lucy proposes anyways.**
B. **When noticing that she is turning away from the patient's discomfort and finding it hard to validate, Lucy focuses on her breath directing her inhalations to herself and her exhalations to the patient, allowing her to stay calm and in the moment with the patient.**
C. **When noticing that she is experiencing countertransference and is feeling frustrated and as if she is unable to help with the patient's suffering, Lucy reminds herself that moments like these are difficult and that although anger and distress may be directed toward her by the patient, she is not the cause of this patient's suffering and it may not be entirely within her power to resolve this in spite of her hope to do so.**

**Answer: B and C ✓**

*Answer A occurs commonly when physicians or caregivers are experiencing empathic distress or fatigue. As it feels too much to bear, they distance themselves from the patient, are unable to*

*provide empathy and validation, and focus instead on trying to fix things. This approach, however, can be invalidating and ineffective for the patient and leads physicians to feeling that their efforts are futile when they are rejected or appear to fail.*

*Answers B and C offer some suggestions for ways to handle this difficult situation using compassion for the self and to replenish Lucy's own reserves so that she can continue providing care to her patient as well as compassion for the patient while maintaining Lucy's attunement to the patient's needs. "Giving and receiving compassion" using the breath (as demonstrated in answer B) can help Lucy stay present in the moment with the patient and can also serve through emotional resonance as a way for the patient to experience some calm and inner peace. In answer C, Lucy utilizes aspects of "Compassion with Equanimity" which helps to instill compassion and validation for the patient's struggles, while also recognizing that this encounter can be challenging for the physician who may not always have the answers or the ability to resolve the patient's pain and strife. It helps Lucy to refocus her efforts and allows her to be gentler with herself, reminding her what is within her power to change or help with, and allowing her to avoid internalizing such situations as failures.*

## Case III

Casey is a family medicine resident who heard about self-compassion from one of her preceptors. She became interested in the practice, as she had begun to recognize that she is highly critical of herself, which has had resultant impacts on her mood, self-esteem, and belief in her abilities, in addition to making it more difficult to connect with her patients and find enjoyment in her work.

To help guide her in developing self-compassion, she has begun utilizing audio- meditations online. Initially, Casey struggled during the meditations as she often found her mind would wander, but over time she was able to refrain from judging herself as harshly and learned how to bring her attention back to the moment. As she has progressed to deeper meditations such as providing loving kindness to herself and using self-compassion to

address shame, she has encountered yet another obstacle. She now finds it hard to immerse herself in these meditations, particularly as she feels that they bring up more discomfort and anguish.

***Question 1.*** **What is the form of resistance that Casey is experiencing?**

A. **Self-criticism**
B. **Disinterest**
C. **Backdraft**
D. **Depression**

**Answer: C ✓**
*This is an example of backdraft, which can be a normal part of engaging in self-compassion. As a fire intensifies when a door opens and oxygen enters in, so too does Casey's discomfort escalate when she allows herself to experience kindness. Backdraft can come in different forms, either by precipitating tension or somatic symptoms, leading to heightened emotions like shame, grief, anger, or sadness, or by intensifying certain fears or thoughts of being a failure or being all alone. While backdraft can be confusing and catches Casey off guard, it is important to remember that this is a normal part of self-compassion and will lessen with ongoing practice. It may however signal that Casey needs to slow down the process and utilize self-compassion at her own pace, proceeding in a way which feels most comfortable.*

***Question 2.*** **How might Casey work to address this?**

A. **Challenge these feelings.**
B. **Notice it and let it pass.**
C. **Reduce or tone down her practice, focusing on more brief and informal practices until she feels better equipped to manage this.**
D. **Step out of the practice and engage in a relaxing, grounding, or enjoyable activity.**
E. **Give up on self-compassion.**

**Answer: B, C, and D ✓**
*As we know, Casey is experiencing backdraft. Though this may be off-putting and feel overwhelming, pushing Casey to battle against these feelings or to stop the practice of self-compassion altogether, it is important to remember that this is a normal experience and can be mitigated in different ways. For some, the backdraft can be tolerated and overcome simply by noticing it and sitting with it. For others, the backdraft can be so intense that they need to tone down their practices, returning to briefer exercises until building capacity to tolerate this. Alternatively, one can step out of the practice for a period of time to ground themselves before giving it another try.*

***BONUS Question.*** **How can one best maintain the skills and tools learned from self-compassion?**

A. **One and done – Once you've tried it once, no need to do it again!**
B. **Use periodically, whenever a significant stressor arises.**
C. **Practice regularly.**

**Answer: C ✓**
*As has been discussed in this chapter, for many who practice medicine, though empathetic and compassionate toward patients and others, it is often difficult to practice compassion for themselves. While this skill is innate within all human beings, it does require some practice to strengthen it, as does any other learned skill. It also takes time to replace the self-critical approach which often develops and becomes an automatic reflex during difficult or stressful times for many over much of their lifetime. As such, to get the most out of self-compassion and to maintain these tools and skills, it is recommended that one should practice these techniques, either formally or informally, on a regular basis.*

**Key Takeaways**

- Self-compassion is one approach to promoting physician wellness.
  - As was reviewed in Chap. 2, self-compassion can be beneficial in several ways including reducing or mitigating physician burnout.
- Self-compassion is a practice that can be learned and developed. There are many interventions and exercises to develop and build self-compassion, including those that can quickly and easily be integrated into a busy day. It is important to remember that self-compassion does not have to be onerous or yet another task on the to-do list!
- While self-compassion can be helpful for just about anyone, it can be particularly useful for physicians and medical trainees who face tremendous stressors during training, as well as pressure and expectations to be invincible and superhuman. Self-compassion specifically aids physicians to be kind with themselves while maintaining connection with their patients, thereby helping to find a balance between both parties' needs.
- Compassion not only confers kindness and validation, but also has an active component by fostering courage to face one's challenges and promoting problem-solving and solution-finding to problems encountered. This allows for ongoing professional and personal development.
- Resistance is not uncommon to the practice of self-compassion. It is important to be mindful of this, as resistance can persist one's suffering and maladaptive coping behaviors. There are many ways to tackle resistance. For those who experience backdraft, it can be helpful to know that this is a normal part of the process, but may signal the need to slow down compassion practices to build capacity to tolerate this.

## Additional Resources

*Additional resources regarding self-compassion exercises are illustrated in* Table *15.2*.

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# 16

# Steps Toward Building a Culture of Humanistic Teaching and Medical Practice

Sheila Harms and Anita Acai

## Why Humanism? A Historical Perspective of Medical Education

In imagining an education that relies on patient encounters to learn the art of caring, we are struck by a conflict that has emerged over the history of medical education. A naturalistic pedagogical experiment occurred when comparing the contributions of Osler and Flexner. In the late 1800s, Osler conceptualized bedside teaching as an extension of patient care and, therefore, a legitimate form of medical education [1]. In his famous report on medical education, Flexner saw this pedagogical technique as insufficient on its own in educating future physicians, due to the ubiquitous problems he found with many medical schools [2].

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Flexner wrote in his report that the standards for medical education in the early twentieth century did not include the biomedical sciences, which he deemed imperative in the landscape of teaching and medical education at large [2]. Many authors agreed that the subsequent compensations made in the transition to a medical education model relying on biomedicine resulted in veneration for biostatistics and its educational importance, to the potential detriment of understanding the patient as a person [2–4].

In this medical education conflict, the physician has symbolically, and perhaps literally, left the bedside such that the patient is no longer rendered central to the educational story of illness and healing. In the wake of this departure, many medical educators have turned to humanism as a pedagogical antidote. Cohen speaks of humanism as an animating passion for physicians who are committed to an inter-relationality with the patient [5]. A return to the work of Flexner shows a historical context where the physician's gaze has instead turned to empiricism for answers. While this may not have been the intended outcome of the Flexner report, the scene has been set for a tension that is still unfolding in contemporary medical education. Science and the care of the patient are situated to spar instead of collaborate.

## Challenges to Humanism in a Biomedical Framework

What is it about a biomedical approach that potentially compromises or dilutes a humanistic view in the teaching of medicine? While the intent was no doubt a collaboration between humans and science, an assumed balance has been upset in the work of educating medical trainees. There are three main characteristics in biomedicine that help us understand this tension. Vogt and colleagues describe the notion that science is what counts when physicians think about explanations and related interpretations for illnesses and their presenting symptoms [6]. Implicit in this understanding is a reductionistic perspective that necessarily relies on looking at the individual parts of the scientific conundrum. Further implied in this kind of investigative work is a

polarity at play: thinking in parts as opposed to thinking in whole. Vogt and colleagues go on to suggest that in a reductionistic framework such as this, molecular determinism or "smallism," defined as "the belief that entities at the molecular scale or level are causally privileged" [p. 943] is present [6]. In this type of thinking, patients and their reports of health problems are understood as an effect of these interacting parts through a path called "upward causation" [p. 943] where the patient as a whole is less important because he or she is not causally registered as an important aliquot within the framework. They note that "even the personal experiences conveyed by patients, notably in the form of narratives, are being denigrated as private or too complex and uncountable for 'objective scientific study'" [as cited in [6]; p. 943]. This perpetuates a dualistic model that pedagogically enacts itself in medical education today. Learning about the person is less important, precisely because it is too complex, leaving us without tools to disentangle the complexities and burdening the physician with uncertainties in an expert culture that requires the opposite. For example, it is somewhat ironic to consider that in frameworks guiding the development and implementation of medical education, the notion of medical expert and its accompanying roles is central to its education [7, 8]. The role of the patient has not yet been symbolically conceptualized in this national framework of medical education but rather exists on the periphery and is assumed to be present. In these scenarios, the narratives that patients bring to explain their illness experience and the meaning that is attributed to it is relegated to a status of lesser importance, which translates for the trainee as an overt or hidden curriculum about the patient. It is no wonder that patients are at times referred to as "difficult" when it is precisely the difficulties that physicians and trainees experience in determining how to understand the patient that necessarily result in uncomfortable tensions.

Reliance on technology is another characteristic that proves challenging in a humanistic perspective. One author notes, "Today, the laboratory test and the clinical experiment to a large degree have supplanted the consultation as the essential unit of medical practice" [9; p. 734]. Schwartz and Wiggins state that

patient dissatisfaction with medicine and medical practice continues to grow despite incredible advances in medical technology [10]. What kind of problem does this signal for the patient and for the medical educator? The authors note that patients "dread medical technology and feel a deepening sense of alienation from their physicians" [p. 331]. Within this statement lies a dilemma facing medical educators in that the metrics of clinical medicine increasingly rely on diagnostics and sophisticated capabilities of science as opposed to notions of what is deeply human, despite the fact that the field of science is limited in its ability to speak to or cure human suffering. In this climate, it is not surprising when patients turn to "unorthodox" treatments despite the immense body of "evidence-based" or "evidence-informed" medicine that is available to physicians. What is convincing to physicians is not as convincing to patients. Science, therefore, can be clinically experienced as cold and alienating. However, it is rare to find a medical curriculum that fosters reflection and critique of its own culture for the purpose of inspiring meaningful change. Within this technological paradigm and tension, physicians are implicated in the challenges that patients experience. In other words, physicians become part of the problem in a biomedical paradigm. This leads us to a third challenge associated with a biomedical approach.

It is increasingly difficult to provide humanistic care in a clinical landscape of technology that is predicated on efficiency, cost-effectiveness, and scientific precision. While these qualities are undoubtedly important in medicine, they do stand in contrast to the significance of taking time to hear patients' stories and questions as a way of understanding the whole, while simultaneously being mindful of the "parts" or body systems physicians have been scientifically taught to treat. The erosion of time is a real threat within clinical practice and physicians need to be wary of the risk that medicine transforms into a kind of practice where "taking the time to talk to the patient seems an archaic luxury" [10; p. 331]. Rider and colleagues emphasize that there is an important distinction between *what we do to patients* as opposed to *being with patients* during their illness and suffering [11]. Simply put, "being with" patients requires time.

**Skill-Building Exercise: Pause and Reflect**

Thinking about the challenges that a biomedical framework poses to humanism in medicine, have you seen any of these challenges playing out in your own context(s)? If so, what did this look like?

## The Problem of Suffering

Few would argue the meteoric advances in biomedicine over the past several decades. These innovations have undoubtedly benefited patients through a leveraging of technology to promote health. These advances largely rely on exactitude and precision. In contrast, the humanistic practice of bedside care is not predictable. Some authors suggest that precision as a medical mindset may inadvertently create challenges such that the biomedical model provides more mythical views than those that reflect real-world medical practice [10]. They state, "The [biomedical] model fails not only because it is an inadequate representation of real medical practice but also because it would prove harmful if actually followed" [p. 334]. Measurements can become confusing once applied to humans, particularly when looking for root causes or etiological explanations for illness. Vogt and colleagues suggest that creating a scale for the measurement of a living person affected by many factors, including environmental, relational, cultural, political, and physical features, becomes a complicated but necessary challenge for physicians [6]. The end result is messy in its engagement and conclusions—a far cry from the specificity and exactitude demanded by science. Even the introduction of the biopsychosocial model [12], which provides a more holistic view of the patient, cannot entirely overcome the problem of precision in that it is not always able to determine causality, which forms the bedrock for medical education [10]. If the demand for precise, specific aliquots of measurement dismiss the personal experience

and the meaning given to it by the patient, it is like "deploring the fact that patients are human" [6; p. 948]. Using this perspective, physicians verge on a potentially antagonistic arrangement with their patients, belying the very oath taken by all physicians—that is, to do no harm.

What is the educational imperative that would lead to a renewed focus on humanism? There is increasing literature attempting to reignite the case for humanism as an essential perspective in medical education, with varying success. The problem of suffering is an important conceptual precursor and impetus to think about when embracing humanism as a curricular element within medical education. A recent article highlights the notion that science does not have the capacity to bring an end to human suffering and yet medical trainees are constantly surrounded by it [9]. Success seems unattainable. Beyond the idea that this hypothetical situation immediately strikes us as nonsensical and dangerous, the question of learning potential still can be considered. Could a medical curriculum intentionally embrace failure as a teaching tool? What is known about suffering? More importantly, where have we as physicians failed our patients in their experience of suffering?

Exploration of signs and symptoms in medical education often leads us to questions of measurement and quantification. The measurement of suffering likely eludes biomedical science in that the phenomenological, subjective experience of the patient circumvents the scientific measurement tools that are available to students, risking translation into a hidden curriculum of failure or disregard. Students and physicians understandably rely on what can be empirically captured as a way of knowing in a culture that celebrates and rewards expert knowledge. But the qualities of suffering often evade measurement tools, such as the psychological and affective elements embodied in a condition that entails felt emotions as well as physical sensations. What then can science say to human feelings in the context of pain? What emotional logic is embedded in the biomedical model that would allow for a penetration into the experience of suffering for patients? For example, the Diagnostic and Statistical Manual, 5th edition (DSM-5) does not equip the student nor the physician with a

better understanding of what it means to suffer as a human being. The DSM-5 offers taxonomic descriptions of symptoms, problems, and deficits that psychiatrists have come to understand as constituting the phenomenon of mental disorders or mental illness, and perhaps even recovery by virtue of a reduced symptom load. In this way, biomedical science leaves the humanistic physician grasping for another theoretical orientation, such as narrative medicine or phenomenology, as extensions of humanism [13].

If suffering is an impetus to call upon humanism as one specific educational response, we must understand something about suffering that goes beyond that of the patient. The notion of physician suffering is more recently receiving attention. However, even the physician who practices within a humanistic framework is liable to suffer. For example, Bakker has written about the collision of values that teachers encounter in their everyday work [14]. This is particularly germane to the work of medical educators. The author focuses on the concept of "normative professionalism," which is an approach adopted by educators where they intentionally develop an awareness of the competing perspectives (i.e., individual, professional, organizational, societal) that come to bear on any one encounter and then reflect on how these perspective influence their behaviors. In other words, trainees develop insight into how their values, beliefs, and actions interact with multiple other systemic or cultural variables at any one point in time and how this net effect bears on the patient experience. Overall, feeling connected to work was an important protective factor against the frequent experiences marked by ambivalence and negativity, whereas feeling isolated posed a threat to teaching. What then do medical educators need to undertake in tackling the agenda of humanism in medical education, with development of the educator being one particular part of an institutional system? In thinking about the bedside teaching scenario previously alluded, a suggestion was made that the physician had left the bedside. Perhaps we can think about it differently such that the physician is still at the bedside and is a critical dyad member who also requires attention.

The problem for physicians is that they are often not recognizable to themselves because they cannot live up to their own

personal ideals, ethics, and values. Cole and Carlin suggest that problems for faculty physicians, which are increasingly commonplace in academic centers, often grow out of a crisis of meaning [15]. Wide-reaching challenges in this setting such as the velocity of an electronic age that outpaces most physicians in keeping up with the latest information, a marketplace restructuring that sees students as consumers to be marketed to, reduced university budgets for clinical and research work, and a history of inequities oriented against women and minorities, all combine to set the stage for current-day academic physicians. In medicine, the notion of health is a central tenet in the day-to-day work of its physicians. This concept embodies not only the absence of disease, but also relies on ideas such as wellness, healing, purpose, and meaning within life. Cole and Carlin argue that "problems in faculty health often grow out of a crisis of meaning and identity that confronts health professionals increasingly unable to live up to their highest values and ideals" [15; p. 148]. It is not surprising, then, that when the tension between what is aspired to and what is permissible are at such odds, burnout as a form of suffering emerges for physicians.

## Beyond the Human: Creating Humanizing Systems

Can the notions of suffering and science and humanism come together for the patient and trainee alike? Kristeva and colleagues highlight this pedagogical tension in their work, appealing to medicine and its education for a restitution between the perceived generalizable objectivity of the sciences and the uniqueness of the medical humanities, interpreted to be the culture of care and healing [16]. The suggestion is made to entertain a radical conceptual change for the purpose of extinguishing polarities, such that medical encounters are simultaneously understood as cultural encounters in the entangled, co-created worlds of the patient and the physician. Therefore, these encounters can be understood both subjectively and within the culture of the biomedical sphere, in a way that allows for educational possibilities that move beyond

polarizing conceptions of "medical expert as scientist" as a central identifying feature. Ferry-Danini also argues that the polarities between certain forms of humanism and biomedicine are simplified and limiting in scope, such that we are distracted by outdated philosophical criticisms of science that prevent us from seeing another potential [13]. She presses readers to consider conceptions of humanistic medicine that include and go beyond the inter-subjective bedside interaction of the patient and physician to include systems of healthcare more broadly.

It is in this context that medical educators must begin to think about their specific roles in developing organizational and institutional cultures that can tolerate the scientific ambiguity of humanism, and simultaneously open up to discourse that is committed to understanding and actualizing the intended spirit of humanism as it applies to medicine and its education. Critics of certain forms of humanism have argued that focusing on physician responsibilities in a humanistic culture may paradoxically translate into a demand for physicians to become more than what is humanly possible within health care constraints [13]. In other words, implementing humanistic practice must extend beyond a sole focus on the individual physician to avoid further pressures and unrealistic, misguided expectations contributing to current burnout and disengagement. This is an important consideration in recognizing that our patients are constantly affected and effected by the systems that they encounter, supporting the argument that it matters less if we excel as humanistic practitioners if, for example, essential medical services are not available. Returning then to the question of medical education and the notion of humanizing systems, we find ourselves in part, looking to the creation of a medical *culture* that is humanistic. Martimianakis and colleagues have determined that the hidden curriculum antithetical to humanism must be tackled in medical education with a focus on institutions and organizations as well as relations within these systemic structures [17]. Some ideas that have been suggested to achieve this include a focus on resilience and wellness curricula for students and faculty alike [18]. The authors also suggest a radical shift in personal vulnerability and authenticity such that medical teaching faculty from all levels of seniority engage in transparency about

mental health challenges, failures, and personal difficulties. Simultaneously, it is understood that this is a tall order and not easily achieved.

Gilligan and colleagues tackled this very question of how healthcare leaders approached the challenge of maintaining a humanistic practice within their organizations [2]. While a number of creative ideas were generated, including the development of humanistically-oriented organizational documents such as policies and vision statements as well as faculty development sessions that promote role modeling, the leaders were less able to answer the question of how to make systemic changes that could penetrate their respective organizations. Kilpatrick summarized some key twentieth century healthcare leadership studies relating to humanism which provided important directions for managers that were somewhat counterintuitive in management culture [19]. Specifically, supportive relationships with a focus on motivation and personal development were noted to be crucial for those who work in a managed system, such as trainees and physicians, as opposed to being controlled or directed. Other models of leadership that focus on the centrality of service and laterality as opposed to hierarchy were reviewed by Kilpatrick. In this type of leadership, there is a shared vision and direction within the organization, held by all members, and in particular, its leaders [19].

**Skill-Building Exercise: Pause and Reflect**

Think about a recent situation in which you took on a leadership role.

1. Did the way in which you enacted leadership in this situation promote or challenge humanistic ideals?
2. If you could go back in time, would you have done anything differently? Why or why not?

What models of practice can medical educators adopt as part of their leadership mandate and training curriculum so as to respect the scientific acumen that medicine requires, as well as deliver upon the essential humanistic elements of patient care? One example is a model of care that returns medical education to the patient as the site of integration. Specifically, the practice model of person-centered medicine or person-centered care has been described as an integrative locus for science, humanism, and ethics. In this model, language that is specific to technical expertise and humanistic care for the patient is both tolerated and meaningful which helps us solve the science-humanism tensions. The focus of this model is to address the whole of the patient as an individual, with attention paid to the experience of illness, patient wishes and values, collaboration with the patient, the context of care, the relationship between the patient and the care-provider, as well as respect for the patient as person [3, 20]. This model can be applied to any specialty and has conceptual roots in a number of different disciplines such as philosophy, the humanities, arts, ethics, and literature; education about this model, both theoretical and applied, has a number of openings for transformative learning.

## Practical Tips for Integrating Humanism Into Medical Education

Humanism reflects "deep-seated personal convictions about one's obligations to others, especially others in need" [5; p. 1031] and, as such, represents a set of values to be continuously imparted throughout training. Stern and colleagues suggest that this can be done in at least three ways: setting expectations, creating experience, and assessing[1] expected behaviors [21]. Integration between

[1] Stern and colleagues refer specifically to "evaluation," a term generally used to describe summative examinations of student knowledge [19]. In this chapter, this term has been replaced with "assessment" due to the growing recognition that skill acquisition is enhanced when student receive frequent and formative feedback.

each of these elements at all stages of training is critical to creating a culture of humanistic teaching and medical practice.

**Key Points**

According to Stern and colleagues [21], there are at least three ways in which humanism can be taught in medicine:

- Setting expectations through public declarations of codes and oaths, explicit requirements for evidence of humanistic attributes assessed in medical school admissions, the hidden curriculum, and sharing experiences of failure.
- Creating experience through explicit integration of humanism into medical training and practice. Examples include professional competency courses and a more explicit focus on professional identity formation throughout medical training; engagement through literature, history, ethics, art, film, media, and spirituality; exercises that focus on the patient perspective; phenomenological interviewing; and health advocacy.
- Assessing expected behaviors in a programmatic way. Common examples include observations (e.g., of patient encounters or objective structured clinical examinations), record reviews, simulations, 360-degree reviews, and content tests.

## Setting Expectations

Setting expectations is the most common way in which values core to the medical profession have historically been emphasized and taught. Examples include public declarations of professional codes and oaths, such as during a White Coat Ceremony, or more explicit requirements for evidence of humanistic attributes

assessed in medical school admissions, such as those gleaned from situation-based judgment tests, references, and interviews. Later in training, role modeling can also become an important way of imparting (or failing to impart) humanistic values [22]. It is well known, for example, that the hidden curriculum plays a significant role in medical training. As a result, one of the most important ways in which trainees develop into humanistic providers is by observing their teachers enact these behaviors. Consciously or unconsciously, this creates a set of expectations for trainees that often supersedes what is taught within the formal curriculum, regardless of how heavily the formal curriculum is emphasized [17].

An example of an area in which expectations are frequently set in medicine—whether consciously or subconsciously—is with respect to failure. Expectations around achievement and success exist as early as students' premedical years, in which they are subject to intensely competitive and selective processes in order to be admitted into medical school [23]. Being anything less than exemplary in this context often feels unacceptable, a notion that is perpetuated in medical school when high-achieving students are grouped together and forced to compete for specialty matches. High expectations are reinforced throughout training and into independent practice, as physicians are continually reminded of the importance of their role in providing exemplary patient care [15, 24]. It is therefore no surprise that failures, despite their inevitability, are often seen as unacceptable in medicine and can contribute to feelings of decreased self-worth and well-being. It is in this context that a humanistic approach to medicine can be useful, providing alternative expectations of success that build resilience and improve well-being. The psychoanalyst, Sigmund Freud, was surprisingly candid about the failures he experienced as a clinician, seeing this admission as generative in its experience [25]. Similar strategies could be employed today as a starting point, including valuing depth of learning rather than just accomplishments in medical admissions, offering opportunities to contextualize failures through group discussions or reflective writing, and encouraging physicians and trainees to be more transparent about the inexactitudes and imperfections of the profession.

**Skill-Building Exercise: Pause and Reflect**

Freud famously published his failures [25].

1. What can failures teach us about expectations in medical education?
2. What are some other ways in which experiences of failure can be shared with trainees?

## Creating Experience

*Creating experience* refers to the explicit integration of humanism into medical training and practice [21]. Most medical schools have professional competency courses that teach undergraduate medical students about humanistic principles, communication skills, and cultural competence [21]. Wald and colleagues advocate for the integration of curricula that embrace professional identity formation *throughout* medical training in order to foster humanistic and resilient healthcare professionals [26]. They suggest a number of pedagogical tools to help with this process at the undergraduate and graduate levels, including interactive reflective writing, synergistic teaching modules, strategies for effective use of a professional development e-portfolio, and faculty development of reflective coaching skills. Other authors have extended these experiences to include faculty, demonstrating the value of "narrative reflective writing exercises, personal awareness explorations, experiential skills-building exercises incorporating feedback and coaching, short didactic presentations, and case discussions" in developing humanistic physicians [27; p. 1681].

Beyond professional identity formation, some schools organize curricular events with music, art, and literature inspired by experiences in healthcare or provide opportunities for trainees to engage in community and service-based learning as part of their training (see case studies in section "Examples of Initiatives Designed to Enhance and Support Professional Growth, Resilience, and Well-Being"). These experiences can foster empathy [28, 29] and well-being [28, 30] among trainees, particularly

if they include key elements such as the opportunity to gain perspective on the lives of others, time for structured reflection, and formal mentoring to ensure that experiences are appropriately contextualized and contribute to learning [21]. Similar approaches can also be effective for faculty, and include engagement through literature, history, ethics, art, film, media, and spirituality [15].

Humanism can also be incorporated into medical curriculum by adding reading material or exercises that demand thinking beyond critical appraisal and extend into an understanding of the patient's perspective (e.g., "Write about the suffering of a patient and how it moved you" or "Write about a difficult patient from the patient's point of view"; also see case study II in section "Example II: OneRoom Schoolhouse") [31]. In many cases, this is easy to implement as it simply involves adding an extra layer of appraisal to existing curricula rather than overhauling what already exists. Those who wish to go one step further might familiarize themselves with the qualitative methodology of phenomenological interviewing to explore the notion of "what something is like" [32–35]. This can be done in a rigorous and scientific way, bringing to light a social constructionist view of others' perspectives that can add a layer of insight above and beyond a strictly medical model. Öhlen, for example, used this technique to investigate the narrative lived experiences of suffering [34]. He added a layer of creativity and meaning to his work by taking the verbatim transcripts of his interviews with participants and turning them into poems that could "recreat[e] and illustrat[e] the experience of embodied suffering, bringing us in direct contact with the narrator's perspective … [and] enabl[ing] the deep meaning in a narrative to emerge" [p. 565]. Indeed, immersing oneself in explorations of patient suffering or other lived experiences can be a powerful way to understand and reconnect with the experiences that make physicians human.

A final example of creating humanistic learning experiences is through health advocacy [3]. Advocacy can occur at many levels and take different forms, including advocacy during patient interactions to community and systems-level activism. Programs that are effective at teaching advocacy skills prioritize advocacy at the level of program leadership, build in protected time for advocacy-related work, develop a clear curriculum around advocacy, and

enlist faculty who are interested and/or experienced in advocacy [36]. Curricula typically include both didactic (e.g., lectures, resident-led discussions and meetings, speakers' panels) and experiential components (e.g., advocacy days, community projects, shadowing policy makers or other political leaders) [36]. When done effectively, integrating advocacy into the curriculum can enhance physicians' advocacy skills and involvement in the greater community, leading to a more engaged workforce [37].

**Key Points**

Humanism can be integrated into medical education in the following ways:

- Implement teaching tools throughout medical training such as reflective writing and encourage the creation of a professional development e-portfolio to focus on the ongoing formation of one's professional identity [26].
- Organize curricular events with music, art, and literature inspired by experiences in healthcare that can help foster empathy [28–30].
- Include reading material and exercises that demand thinking beyond critical appraisal, and which extend into an understanding of the patient's perspective [31].
- Include advocacy experiences in the medical curriculum [3, 36].

**Skill-Building Exercise: Pause and Reflect**

1. Which of the activities discussed in this section have you tried? What were your experiences like?
2. Which activities would you like to have the chance to experience? How might they be integrated into your current training or work environment?

## Assessing Expected Behaviors

Beyond setting expectations and creating experiences, it is also critical to *assess expected behaviors* [21]. Although it is a well-known fact in medical education that assessment drives learning, assessing humanism can often seem daunting because it is reflective of a set of internal values that is ultimately difficult to measure [5]. However, some researchers have pointed to specific attitudes and behaviors that are enacted by humanistic physicians and can more directly be assessed. Examples include a respect for each individual's humanity, compassion, listening, caring, and concern for the cultural experience of suffering [5, 22, 38]. Other studies point to an ability to engage in reflective and reflexive practice, humility, curiosity, having high standards, thinking about a patient holistically, being deeply engaged in the patient-physician relationship, and recognizing personal biases and working to overcome them [39–41]. Resilience and well-being are also necessary shaping forces in the development of a professional identity that is reflective of humanistic values [26, 42].

A number of existing resources can help medical educators assess the development of humanism among trainees. Examples of commonly used tools are available on the websites of national licensure bodies, such as the Royal College of Physicians and Surgeons of Canada (canmeds.royalcollege.ca/en/tools) and the Accreditation Council for Graduate Medical Education (acgme.org/Specialties/Recommended-Assessment-Tools-for-the-General-Competencies/pfcatid) in the United States[2]; see also [43] for a critical overview of existing tools for the assessment of humanism in their methodological review. As suggested by Buck and colleagues, the challenges of assessing humanism can make it

[2]Note that educators often use the same or similar assessment tools to measure professionalism and humanism, likely due to the overlap between the two constructs [5, 21, 43]. While tools that measure professionalism are a good starting point, they may have lower construct validity than tools that measure humanism more directly.

tempting for educators to rely exclusively upon self-reported measures; however, these are problematic as a *sole* source of assessment data due to their poor psychometric properties [44]. Instead, it is recommended that educators take a programmatic approach to the assessment of humanism by using a variety of tools such as observations during patient encounters, observations during objective structured clinical examinations, record reviews, simulations, 360-degree reviews, and content tests [43, 45]. Direct observations of trainee-patient interactions are particularly valuable for assessing humanism because they directly measure, rather than infer, observable behaviors. The shift toward competency-based medical education may provide additional impetus for such an approach, as more frequent opportunities for direct observation and feedback are cornerstones of this new framework [46].

As a final caveat, it is important to note that some educators may feel uncomfortable assessing humanism because they feel that it is antithetical to its ideals. When implemented correctly, however, this does not have to be the case. Friedman and MacDonald promote a definition of "humanistic assessment" that conceptualizes assessment as an interactive and participatory process and that invites the trainee to provide input into the focus, breadth, and content of the assessment [47]. Given its trainee-centered focus, competency-based medical curricula may make it easier for faculty to create an environment that is supportive and promotes trainee agency [48]. Educators may also wish to pursue other creative approaches to assessment such as trainee portfolios. Driessen, for example, argues for the value of *comprehensive* (rather than reflective) portfolios, which can be integrated into the curriculum and used in combination with other instruments to help contextualize trainees' experiences and development as they progress through their training [49]. Important elements for supporting the success of portfolio-based approaches to assessment are clear goals and procedures, integration with the curriculum and other forms of assessment, flexibility, support through men-

toring, and measures to improve feasibility in terms of the amount of time required for completion [50].

**Did You Know?**

*Humanistic approaches to assessment are participatory, allowing trainees to provide input into the focus, breadth, and content of assessments. A range of assessment options are provided, which together capture and contextualize trainee experiences.*

**Skill-Building Exercise: Pause and Reflect**

1. As a trainee or assessor (or both), what have been your experiences regarding the assessment of humanistic qualities?
2. What are some ways in which you can promote humanistic assessment that is interactive and participatory?

## Evaluating Your Efforts

Although methods of program evaluation are not a specific focus of this chapter, it is critical that educators spend time evaluating the extent to which new curricula have been effective in attaining their goals. The results of this process should be integrated back into the curriculum in a continuous feedback loop, in order to ensure the ongoing development and maintenance of the program. As one example of how one might approach evaluating a humanism curriculum, Canales and colleagues used a pre-/post-approach combined with Kirkpatrick's four-level program evaluation model to evaluate a new humanism curriculum for anesthesiology residents [51]. Kirkpatrick's model is useful as it is relatively simple and allows outcomes to be grouped into different levels of impact:

participant satisfaction, knowledge acquisition or attitude change, transfer of knowledge or attitudes, and impact on broader outcomes such as patient satisfaction (see [52] for more details). Evidence of impact in Canales and colleagues' study involved patient ratings of residents' empathy and professionalism, as well as patient responses to questions assessing satisfaction, anxiety, and pain [51]. Other measures included residents' own self-evaluations of their empathy, as well as a reflection diary and curriculum evaluation.

For educators looking to dive more deeply into program evaluation methods in health professions education, Frye and Hemmer and Haji and colleagues offer useful resources for the evaluation of medical education programs [53]. The perspectives of Haji and colleagues may be particularly well-aligned with humanism as their formulation for program evaluation is not prescriptive; rather, it is a holistic guide that "involves multiple stakeholders, uses a combination of available models and methods, and occurs throughout the life of a programme … [to allow] evaluators to move beyond asking whether a programme worked, to establishing how it worked, why it worked and what else happened" [54; p. 342].

**Skill-Building Exercise: Pause and Reflect**

Think of an activity/program you have experienced during your training that was designed to promote humanism in medicine.

1. What impacts do you think it had at each level of Kirkpatrick's framework?
   (a) Participant satisfaction
   (b) Knowledge acquisition or attitude change
   (c) Transfer of knowledge or attitudes
   (d) Impact on broader outcomes (e.g., patient satisfaction)
2. What, if any, changes might you make in order to increase the impact of the activity/program?

## Beyond the Classroom

In order to build and sustain a culture of humanistic teaching and medical practice, efforts to incorporate humanism must extend beyond the classroom. In a scoping review of the existing literature on humanism and how it interfaces with the hidden curriculum, Martimianakis and colleagues found that the majority of humanism-based reform efforts were targeted at medical students through formal programs, courses, and seminars [17]. They suggested a need to be more explicit about addressing humanism at the structural and organizational levels, noting that this was critical to "providing an institutional atmosphere/climate for humanism to flourish" [p. S10]. Examples of such efforts can include vision statements, policies about wellness, role modeling, random acts of kindness, and faculty development [2]. Other examples might include departmental events, such as seminars or lectures devoted to the topic of humanism and its role in teaching and medical practice.

As noted earlier, role modeling also plays a critical role in developing a culture of humanism [22]. Reward structures should be put into place to recognize exemplary role models, while faculty development programs can help develop and sustain a faculty complement that exemplifies the values of humanistic teaching and patient care. Examples of faculty development efforts might include an interprofessional approach such as the one described by Fornari and colleagues, who used a combination of small group work, experiential learning, and critical reflection to help develop humanistic mentoring skills among nurses and physicians [55]. Similar approaches guided by interprofessionalism and small communities of practice, built on humanistic values, have also been successful in other contexts [27, 56].

Examples of local educational projects and curricula from the authors' home institution are included in section "Examples of Initiatives Designed to Enhance and Support Professional Growth, Resilience, and Well-Being" to illustrate how humanism may be creatively and meaningfully integrated into medical education.

**Skill-Building Exercise: Pause and Reflect**

Think about the best and worst role models that you have encountered throughout your medical training.

1. What qualities did they have?
2. How many of these qualities were aligned with a humanistic approach to teaching and patient care?

## Examples of Initiatives Designed to Enhance and Support Professional Growth, Resilience, and Well-Being

### Example I: Art of Seeing™

The Art of Seeing™ (www.mcmastercce.ca/art-of-seeing) is a visual literacy program offered to medical trainees, faculty, and staff at McMaster University to enhance professional growth and development. This innovative partnership between McMaster University's Department of Family Medicine and the McMaster Museum of Art identifies and utilizes art as a medium to facilitate personal learning within the health disciplines. Humanistic concepts are understood broadly as the ability to engage in patient encounters with compassion, empathy, active listening, and critical thinking. The achievement of these skills takes place through focused observation and analysis of art. Trainees in the program travel to local art galleries and are expertly guided through experiential learning encounters that involve viewing and engaging with art. Discussions and related reflective writing exercises promote critical discourse about important issues such as historical identities, privilege, power, beauty, bias, and their inter-relatedness with education and society at large.

## Example II: OneRoom Schoolhouse

The creators of the OneRoom Schoolhouse curriculum at McMaster University recognize that the community learning context provides exceptional opportunities to recognize how individual patients can inform learning. In the OneRoom Schoolhouse, postgraduate trainees across all levels of training in psychiatry meet as a small group. The trainees select a complex scenario generated from local clinical experiences to develop as a case scenario for exploration and learning over several weekly sessions (i.e., a module). A faculty member joins as an adjunct trainee and resource person for the case. Objectives of training suggested by the Royal College of Physicians and Surgeons of Canada are integrated into the case. However, residents move beyond generic learning objectives and penetrate the specific world of the individual patient by identifying and arranging learning experiences that would be relevant to the life, values, and preferences of the patient. Specific examples include visiting a homeless shelter and taking up questions that are germane to the patient's medical scenario. Different elements of training are integrated into the learning demands of the scenario such as diagnostic interviewing, critical appraisal, and practicing objective clinical structured examination skills. In this pedagogical encounter, the patient remains at the center of the learning and is situated to help promote humanistic perspectives within medical training. Anonymous trainee evaluations for this curriculum have reflected these efforts, consistently yielding high scores and positive reviews from residents.

## Example III: Wellness Curriculum (RESPITE)

At McMaster University, resident leadership is both emphasized and valued. Our postgraduate medical training programs and institutions strive to create a culture that promotes wellness, particularly as we enter an era of sustainable medicine. The *R*esilience in the *E*ra of *S*ustainable *P*hysicians: An *I*nternational *T*raining *E*ndeavour (RESPITE; https://respite.machealth.ca) is a voluntary

resilience curriculum that leads this cultural shift by addressing an often-neglected area in medical trainees' formal education. Founded by McMaster's psychiatry program, the initiative grew from a meaningful synergy between medical students, resident physicians, and academic healthcare professionals at several sites across North America. While RESPITE began with an e-curriculum, it has expanded locally to include peer support rounds and a wellness newsletter.

The purpose of RESPITE is multifaceted to: (a) teach the importance of enhancing wellness and mitigating stress in a self-directed manner, (b) foster trainees' comfort in sharing and destigmatizing their experiences with chronic stress and burnout, (c) encourage dialogue between the medical infrastructure and medical professionals, and (d) support the modern physician to participate more holistically in addressing the needs of a rapidly changing healthcare landscape. RESPITE encompasses three components: an e-curriculum, peer support rounds, and quarterly newsletters. The e-curriculum integrates two core learning dimensions: *Know Yourself* and *Integrate New Lifestyles*, which focus on building awareness and providing strategies to enhance resilience. This is delivered during optional teaching time, and combines lectures, reflection, and simulated skill-building exercises. Peer support rounds are offered and provide a confidential space solely for residents to debrief, discuss, and process difficult topics related to life as a psychiatry resident. This works to promote a sense of safety and belonging and builds self-esteem. The newsletters are distributed to staff and residents, offering wellness pearls and serving as a reminder that physicians are not alone in their experiences of burnout. RESPITE is currently within its pilot phase, having launched in 2019. Over the next 12 months, residents' engagement and feedback will be collected to further enhance the project. These data will help to understand how best to engage and support trainees, as well as determine the utility and effectiveness of methods aimed at improving resilience and well-being among residents.

**Key Takeaways**

- In this chapter, the authors have provided an overview of some of the competing demands that confront medical educators in the task of educating medical trainees about humanism and its importance in medicine.
- The authors have highlighted ideas and dilemmas that are represented in the literature and that have emerged in their own experiences within humanism in medical education.
- This chapter also highlights practical steps toward building a culture of humanistic teaching and provides practical pedagogical strategies to assist with this undertaking.

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# 17

# Pushing Back: Recognizing the Need to Advocate for Systemic Change in a Sustainable Medical Field

Karen Saperson and Bryce J. M. Bogie

## A Challenging Time

It is a challenging time to be a physician, and even more so a physician in training. Physicians are drawn to the profession by a deep and sacred desire to help alleviate suffering, despite acknowledgement of the many sacrifices associated with the role [1]. The core value of compassion is central to physician identity, and the ability to practice medicine in a humanistic manner is essential for well-being. Pressures within the current healthcare environment are overwhelming at times, and may contribute to erosion of the idealistic intentions with which most physicians entered medical school. These pressures include the need to study and master vast quantities of dense and complex information under trying conditions and within tight time constraints while also dealing with

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increasing volumes of aging, complex patients. Added to this are the burdens of mastering new technologies to perform one's work, each with layers of added bureaucracy, in a culture that requires constant vigilance, defensive, and defensible practice. These factors have taken their toll on today's physicians, placing the commitment to a "sacred covenant" of care in jeopardy. As a result, healthcare is facing an unprecedented crisis in the depletion of the mental and physical health of its physician workforce. There is a great deal of evidence linking patient safety, quality of care, compliance, and patient satisfaction data to the health of the physician workforce [2, 3].

In order to grapple with the complexities and reasoning for needed change that is presented within this chapter, some critical concepts will be briefly defined in the next section. Many of these terms are also defined in Chaps. 1, 8, and 10.

**Key Points**

- Pressures within the current healthcare environment (e.g., the need to study and master large volumes of complex information and learn new technologies) can be overwhelming to physicians and trainees.
- These pressures cumulatively affect the mental and physical health of the physician workforce, placing the commitment to a "sacred covenant" of care in jeopardy.

## Important Definitions and Concepts

***Burnout*** The term "burnout" was first defined by Freudenberger as a state of mental and physical exhaustion caused by one's professional life [4]. This condition (described in more detail in Chap. 10), which addresses the clinician's desire to prove their worth in demanding situations, is a very real and disturbing threat to the practice of humanistic medicine. For example, a 2007 study

demonstrated that 45.7% of Canadian physicians were classified as being in the advanced phases of burnout [5]. A more recent survey from the Canadian Medical Association further showed that 50% of trainees screened positive for depression, with 15% of trainees (nearly twice the rate of practicing physicians) reporting recent suicidal ideation within the past 12 months [5–7].

**Did You Know?**

*The rate of physician suicide is among the highest in the world at a staggering rate that is double that of the general population, with one physician dying by suicide each day in the USA [1].*

***Moral injury*** The term "moral injury," initially used in the context of military personnel responding to factors beyond their control, aptly captures the sense of helplessness experienced by many practicing physicians and residents who regularly experience the inability to act in the patient's best interest due to barriers within the healthcare system [6].

***Resilience*** Resilience is defined as "the ability of an individual to maintain personal and social stability despite adversity" [1]. Resilience is an important skill that many believe can be taught, to a certain extent, to medical trainees [4]. Beresin and colleagues postulate that resilience is a skill that can be learned rather than being an innate trait, and that resilience education and training may prove important during medical school and residency training [1]. These researchers refer to a model of understanding wherein the following two complementary activities or repeated behaviors can help facilitate the acquisition of the skill:

(i) Preventive activities/behaviors (i.e., warding off hardships by actively resisting adversity)
(ii) Corrective activities/behaviors (i.e., coping effectively under traumatic situations).

Beresin and colleagues advocate for the importance of considering an integrated curriculum in resilience training in which resilience is valued as a core component of professionalism, thereby potentially influencing cultural change in institutional structures and policies [1] .

There are many examples of creative resilience-based interventions and curricula [8–11]. Beresin and colleagues synthesized findings from previous literature into a list of interventional resources that may be effective at promoting resilience in the physician workforce [1]. These interventional resources include:

- Students and residents' participation in small reflective seminars that focus on the psychosocial and physical impacts of practicing medicine
- Increased curricular focus on topics relating to personal transformation throughout the course of medical school and residency training
- Encouraging and fostering reflective practices among members of the physician workforce
- Developing healthy lifestyle modules (e.g., diet, exercise) to promote physician wellness
- Integrating mindfulness training into the medical education curricula
- Promoting inter-specialty relationships and communication through social events
- Integrating medical humanities into the curricula
- Promoting institutional awareness on physician wellness

Several other studies have examined the use of a public health approach focused on preventive factors [12–15] with the rationale that such an approach will generate necessary interest and funding for initiatives. For example, the Accreditation Council for Graduate Medical Education introduced the Clinical Learning Environment Review (CLER; see section "Additional Resources") which requires programs to measure burnout in their program on an annual basis [14]. It is important to note, however, that relying on the development and mastery of personal resilience to "fix" all

of the immense and complex challenges facing healthcare is simplistic and would be a grave error [4]. After all, there is no silver bullet for building resilience [4]. There is overwhelming evidence that to be competitive for admission into medical school, and to graduate as a physician, a track record of personal resilience is required. Card argues that resilience building interventions are only useful to address "unavoidable" occupational suffering inherent in the physician's role, as distinguished from "avoidable" suffering, which refers to systems failures that can be prevented and which will likely not be impacted by all the personal resilience training in the world [16]. To address, the latter will require complex and innovative systems-based solutions with collaboration between physicians, administrators, and institutional leaders to both confront and prevent systems failures.

***Physician wellness*** The terms "resilience" and "wellness" are often used interchangeably [17]. Berger and Waidyaratne-Wijeratne highlight the importance of differentiating between these terms [17]. These researchers propose a framework for understanding the nuanced relationship between resilience, wellness, and burnout as a way to advocate for resilience-based interventions that will allow residents to engage with workplace adversity and develop skills to avoid burnout (see Fig. 17.1). Just as important is the need to distinguish between burnout and depression [18].

***Wicked problems*** The term "wicked problem" was first described by Rittel and Webber as a problem with "innumerable causes, tough to describe and with no easy, reproducible or attainable solution" [19]. Wicked problems are differentiated from other problems by the fact that traditional processes are unable to resolve them. The term has become synonymous with multidimensional challenges of immense magnitude, such as those facing healthcare in the present era. The current struggle to reconcile inherent challenges to provide a sustainable framework for healthcare delivery, compared to the rising rates of burnout among the physician health force, raises the question of whether healthcare itself, or the elusive solutions to current healthcare challenges,

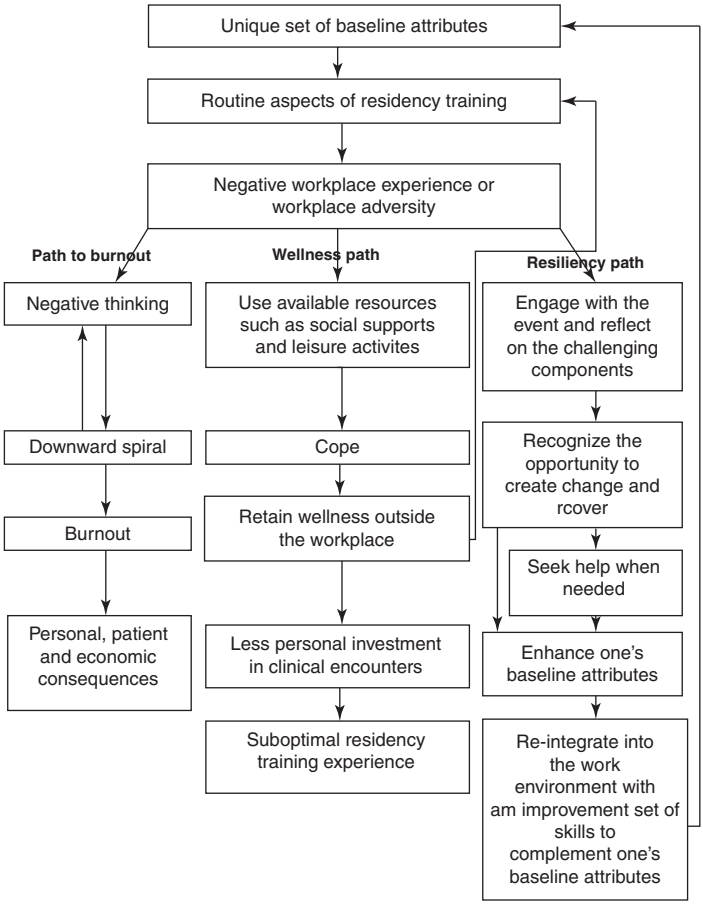


**Fig. 17.1** A framework for understanding the relationship between resilience, wellness, and burnout developed by Berger and Waidyaratne-Wijeratne [17]. (Reproduced without modification according to the license terms outlined in CC BY 2.0: http://creativecommons.org/licenses/by/2.0. © 2019 Berger, Waidyaratne-Wijeratne; licensee Synergies Partners)

constitute the wicked problem [6, 20]. While there are by definition no solutions, the healthcare community will require innovative strategies to tackle the complex issues going forward.

**Key Points**

- Burnout was first defined by Freudenberger as a state of mental and physical exhaustion caused by one's professional life [4].
- Burnout is a very real and disturbing threat to the practice of humanistic medicine.
- Approximately 50% of trainees screen positive for depression [5–7].
- Resilience is a skill that can be learned, rather than being an innate trait. Resilience education and training may prove important during medical school and residency training.
- Reliance on the development and mastery of personal resilience alone to "fix" all of the immense and complex challenges facing healthcare is overly simplistic and would be a grave error.
- There remains a need for innovative strategies to address the complex issues and challenges experienced by providers and patients in today's healthcare system.

## The Emotional Roles Within the System

In this section, the authors examine the literature supporting the need for a call to action for systems-based change.

***The role of empathy*** A loss of empathy throughout the system contributes to physician burnout [6]. True empathy, that is the ability to experience things through others' perspectives, is the first step towards combatting burnout.

***"Patients before paperwork"*** Collier explored the American Medical Association's recommendations for systems-based changes needed for the prevention of physician burnout by using a "patients before paperwork" approach [21]. The recommendations for systems-based change include:

- Implementing team-based care
- Enhancing communication with team huddles
- Developing clinician float pools to cover life events
- Including scores for physician well-being in institutional success metrics
- Allowing flexible schedules
- Creating a wellness committee and infrastructure
- Engaging senior leadership
- Making a business case for physician well-being
- Improving workflow efficiency
- Reducing clerical burdens from electronic medical records
- Measuring predictors of burnout longitudinally

***Deliberate action to promote physician wellness*** In a systematic review of 26 articles, Raj [22] identified the major factors associated with resident well-being, which include:

- Autonomy
- Building of competence
- Strong social relatedness
- Sleep
- Perseverance
- Time away from work

A number of studies reinforce the notion that both individual-based and systems-based interventions are needed to effectively mitigate resident burnout and promote wellness [23–25]. Furthermore, solutions can only make a significant impact if the issue of "who owns the problem" is addressed in a collaborative framework [26]. All initiatives should be evaluated, and a quality improvement model implemented, to address needed changes [2,

22, 27, 28]. A collated summary of recommendations from these studies are addressed at three levels, as follows:

- The national regulatory bodies address:
  - Wellness curricula that do not add to the burden of training requirements but are integrated into existing curricula
  - Regulated duty hours
- The hospital-based system addresses:
  - Peer support for residents involved in medical error and lawsuits
  - Promotion of a respectful healthcare team atmosphere and culture
  - Protection from "toxic" work environments
  - Less time with computers by transferring administrative duties to other professionals
  - Increasing the staff of the healthcare team
- The academic training programs address:
  - Patient service size and work hours
  - Providing flexible scheduling
  - Open and safe communication with supervisors, feedback, and peer support
  - Opportunities for reflection and mindfulness and resilience training
  - Ensuring a positive learning environment and timely and appropriate feedback
  - Providing appropriate leave for illness and maternity/parental leave

***Physician voices: "Nothing about us without us"*** Meaningful systemic change in healthcare must involve physician voices at all tables where major healthcare decisions are being made. This will require a significant cultural shift and a willingness to foster and engage true partnerships on the part of government, hospitals, academic institutions, and the physicians themselves. Physicians generally value being a "good citizen," and this is often subtly (and, at times, overtly) reinforced in training. Indeed, the culture of being constantly scrutinized and assessed in medical school,

along with the rewards that come with service and compliance, are positively evaluated and rewarded. Speaking up about controversial issues is not easy and may not come naturally to most. There are few formal efforts to encourage differences of opinion or controversy-related discourse. Despite the requirements of all medical schools to incorporate the study of bioethics and conflict resolution in medical education curricula, there is often a disconnect between the formal curriculum and managing conflicted ethical dilemmas in the clinical setting. Formal learning of the skill of "speaking up" in morally sensitive or conflicted situations is rarely taught as a formal curriculum in medical school. Many academic institutions remain decidedly hierarchical, and the more authoritarian a culture is, the more formidable a barrier it can be to medical students and junior residents. This barrier prevents trainees from engaging in discussions that are controversy-laden because they are constantly aware of the need for positive evaluations in order to progress to the next stage in their career trajectory. Academic institutions must play a leading role in formally empowering and incentivizing medical trainees to engage in discourses where differing points of view are raised respectfully. This will ultimately lay the foundation for physicians to develop the skill to "speak up" and advocate for change within systems that will drive improved patient care and a healthier workforce [29]. Faculty development should be designed to enhance pedagogical skills that will actively and deliberately facilitate this discourse in trainees.

Findings from a Dutch study indicated that residents tended to remain silent when they encountered organizational barriers or opportunities to improve the quality of their work [30]. Perceived effectiveness or positive outcomes related to speaking up, and safety in doing so, are important factors that drive residents' efforts to speak out. The researchers also provide important starting points that assist in empowering medical residents to voice their suggestions for change, recognizing that helping residents to speak up could eventually increase residents' well-being [30]. The study goes on to describe how positive voice experiences create a sense of control among trainees, which is linked to trainees' improved sense of well-being. Speaking up could bring a twofold

benefit: (1) residents would feel better and (2) the organizations within which residents work would function better. The findings of this study also indicated that the opinions and actions of supervisors had a considerable influence on residents' decisions on whether to speak up, highlighting the importance of faculty development initiatives to deliberately promote supervisors' encouragement of residents to speak up.

***Organizational strategies*** Hospitals and other healthcare organizations must commit to addressing physician burnout in a meaningful manner. Several studies in different medical specialties demonstrate a growing body of evidence for active preventative measures to mitigate against the sequelae of burnout in physicians. As in medicine, prevention is always preferable to costly and imperfect treatment.

Back and colleagues advocate for the identification of burnout before it becomes "full-fledged" [4]. These researchers make a case for building resilience in the medical workforce in preference to the costly and difficult task of combatting burnout. They argue that the insidious nature of burnout reaches a stage which is "too late" for effective intervention. They suggest that proactive attempts to address the clinician's desire to prove their worth, which they see as the "seed" of burnout in all new recruits, may mitigate the full-fledged syndrome and its sequelae. Shanafelt and colleagues have developed a highly effective model of understanding burnout at the Mayo Clinic [2, 27]. These researchers examined drivers of burnout in physicians, grouping physicians into individuals, work units, organizations, and national factors. Working on the premise that "engagement is the positive antithesis of burnout," the researchers clearly articulate that deliberate, sustained, and comprehensive efforts by an organization can make a significant difference in reducing burnout and promoting engagement in the physician workforce. They argue that beyond the moral and ethical arguments, there is a strong business case for organizations to invest in efforts to reduce physician burnout. By operationalizing this model at the Mayo Clinic, the researchers demonstrated that implementing these strategies is both cost-effective and can align with organizational objectives. The rates of

burnout deceased by 7% despite a national increase in burnout rates of 11%. The resulting framework recommends nine organizational strategies to promote physician engagement:

1. Acknowledge and assess the problem.
2. Harness the power of leadership.
3. Develop and implement targeted interventions.
4. Cultivate community at work.
5. Use rewards and incentives wisely.
6. Align values and strengthen culture.
7. Promote flexibility and work-life integration.
8. Provide resources to promote resilience and self-care.
9. Facilitate and fund organizational science (developing new metrics, establishing national benchmarks, implementing practice analytics, and conducting intervention studies).

In their 2019 article, Shanafelt and colleagues emphasize the need for all ethical healthcare organizations to address the issue of physician burnout, reinforcing the link between healthcare provider burnout, increased costs to the healthcare system, and patient harm including mortality, patient dissatisfaction, medical error, and workforce maintenance [27]. The researchers cite four main drivers motivating healthcare leaders to build sustainable and well-resourced well-being programs: (1) the moral-ethical case (provision of compassionate high quality patient care); (2) the business case (overall costs to the healthcare system); (3) the tragic case (physician suicide); and (4) the regulatory case (lawsuits). They recommend measuring physician well-being longitudinally using an annual survey or scale, such as the Stanford model for healthcare provider well-being, based on the Professional Fulfillment Index (see section "Additional Resources"), which provides metrics for the healthcare organization and academic leadership on where to focus attention and resources. The metrics of success measured in this scale include three indicators of professional fulfillment: (organizational) culture of wellness, efficiency of practice, and personal resilience.

***Using "outside of the box" approaches*** Current practices in healthcare are not adequately and comprehensively addressing the "wicked problems" of healthcare. Yet, despite these significant challenges, the authors wholeheartedly endorse that the practice of medicine remains noble, rewarding, and critically important for the survival of our species. The way forward involves a major culture shift, uptake of new science and technology strategies, and embracing new ways of collaboration.

Augustsson and colleagues make a strong case for the use of soft system methodology (SSM) to address some of the complexities in managing change in healthcare [20]. SSM is strongly grounded in systems theory and complexity science and offers a balance between structured versus flexible processes for updating and implementing the use of evidence-based approaches for healthcare practices. The researchers emphasize the need to take into account the multi-dimensional nature of healthcare settings, the importance of contextualization of interventions, and the need for an iterative learning cycle based on quality improvement models.

In their white paper entitled *The new era of thinking and practice in change and transformation: A call to action for leaders of health and care*, Bevan and Fairman make a compelling argument for true change in the way we conceptualize healthcare systems: advocating for less hierarchy and more grassroots leadership [28]. They describe five approaches to enable the critically important emerging direction in health and care: (1) activate disruptors, heretics, radicals, and mavericks; (2) lead transformation from "the edge"; (3) change your story; (4) curate rather than create knowledge; and (5) build bridges to connect the disconnected. Bevan and Fairman go on to distinguish the current levers for change in healthcare (performance agreements, contracts, compliance, and inspection regimes and incentive systems), which are largely transactional and which must be built on a foundation of relationships, making the argument that both transactional and relational elements are necessary for successful healthcare systems [28].

The uptake of these models of leading healthcare organizations will address many of the factors implicated in physician burnout, giving individual physicians a critical voice and opportunities for

shared decision-making within organizations that are ultimately less hierarchical.

**Key Points**

- A loss of empathy throughout healthcare and medical teaching systems contributes to physician burnout [6].
- Previous research supports the notion that both individual-based and systems-based interventions are needed to effectively mitigate resident and physician burnout and promote wellness [23–25].
- Research arguing for systems-based change recommends targeting three levels: (1) national regulatory bodies; (2) the hospital-based system; and (3) academic training programs [2, 22, 27, 28].
- Meaningful systemic change in healthcare must involve physician voices at all tables where major healthcare decisions are being made. This will require a significant culture shift and a willingness to engage in true partnerships on the part of government, hospitals, academic institutions, and physicians themselves.
- When confronted with organizational barriers or opportunities to improve the quality of their work, residents' perceived effectiveness of their speaking up, and their safety to do so, are important factors that drive residents' efforts to speak up. Supervisor encouragement and support is also an important factor [30].

**Key Takeaways**

- It is a moral, ethical, and fiscal responsibility for all healthcare institutions, academic programs, and hospitals to provide a clinical learning environment that promotes best available care to patients. A necessary

component of this requirement is a healthy physician and trainee physician workforce.
- Pressures within the current healthcare environment are overwhelming and can contribute to the onset of burnout among physicians and residents. To address this serious condition, academic institutions must strive to empower physicians and residents to develop the skill to "speak up" and advocate for change that will result in improved patient care and a healthier workforce [29].
- The wicked problems of healthcare require innovative solutions to ensure sustainable practice. It behooves organizations to collaboratively and deliberately address both personal and systemic/organizational factors to mitigate physician burnout and promote wellness. This, in turn, will promote the use of innovative methodology and the uptake for using all available evidence in a quality improvement model.
- Hospitals and other healthcare organizations must commit to addressing physician burnout in a meaningful manner.
- There is a growing body of evidence in support of active preventative measures to mitigate against burnout. Faculty development initiatives should, therefore, be designed to enhance pedagogical skills that will proactively and deliberately address burnout before its onset. In order to achieve this, a major cultural change is required to elicit systems-based changes that will involve meaningful engagement and partnership across government, institution, hospital, program, and physician levels of the organizational hierarchy.

## Additional Resources

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# 18

# Recommendations and Resources for Coping with Burnout

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and Heather Hrobsky

## Physician Burnout: A Simmering Public Health Crisis

Burnout is a toxic occupational syndrome. The World Health Organization (WHO) describes burnout as one of the sequelae of poorly managed chronic workplace stress that is characterized by three dimensions: (1) feelings of energy depletion or exhaustion; (2) increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and (3) reduced professional efficacy [1]. Burnout is included in the 11th revision of the International Classification of Diseases as an occupational phenomenon that influences health status or contact with healthcare [1]. Although burnout is an occupational phenomenon, it is clear from the discussion in preceding chapters that burnout spills over into the personal realm, thus burnout is a syndrome with pervasive effects.

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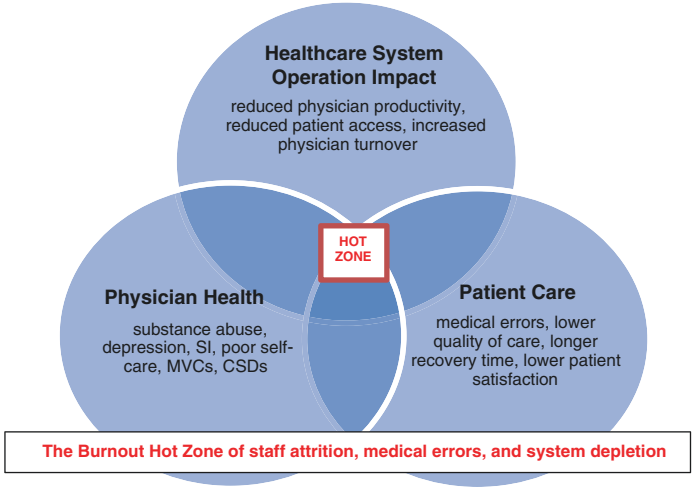
Physician burnout is a palpable and growing problem, with rates ranging from a third to over half of North American physicians and trainees [1–6]. The onset of burnout can occur as early as medical school and postgraduate medical training [7–9], on a background of elevated rates of depression, anxiety, and overall psychological distress relative to the general population and age-matched peers [10]. Burnout is also associated with depression, suicidal ideation, and substance abuse [6–16]. Physician burnout constitutes a public health crisis as it can be associated with increased medical errors, lower patient satisfaction, longer patient recovery times, and decreased professional work effort, which ultimately constitute an unsustainable physician workforce [5, 6, 12–20] (See Fig. 18.1). Although individual-level physician factors are important, the key drivers of burnout are thought to be largely rooted at the organizational and systemic level [5]. Key drivers include excessive workloads, inefficient work processes,




*Note: SI,* suicidal ideation; *MVC,* motor vehicle collisions; *CSD,* chronic stress disorders.

**Fig. 18.1** Health systems crisis associated with physician burnout [5–20]

high clerical burdens, work-home conflicts, limited physician input with respect to issues affecting their work lives, organizational support structures, and leadership culture [5].

## The Medical Ecosystem: Personal to Systemic Needs Assessment

The medical profession values innovation but has paradoxically been slow to recognize the scale of physician burnout, as much of the work on measuring and managing the problem only commenced in the past decade. Literature has shown that this stems in part from the historic culture of self-denial in medicine, with residents learning self-sacrifice as part of the professional identity [21–24]. This early acculturation of physicians to the idea that self-care is superseded by professional duty has had profound effects, as few physicians seek help or do so very cautiously due to perceived stigma, denial, and avoidance, concurrent with real fears about implications for licensure [11, 23, 25]. This discomfort with personal vulnerability is ultimately detrimental as it allows the kindling of burnout, which simmers as it continues to be fueled by shame.

The informal curriculum is rich in teaching the art and joy of medicine, but at the same time contains deleterious elements that emphasize the need to escalate the conversation about burnout prevention and management. There has certainly been progress in that there is greater emphasis on self-care as a tenet of professionalism; however, ongoing work is required to address the stigma of disclosing burnout symptoms [21, 23, 25, 26].

Recent studies have shown that a combination of individual-level and organizational-level approaches is an essential component in the reduction of physician burnout, as the problem is multifactorial and exists in a complex ecosystem [5, 13–15]. At the individual level, self-assessment and wellness resource utilization should begin in the nascent years of medical education, with consolidation over the course of progression to independent practice. Medical learners and physicians in practice should engage in ongoing personal scans to take stock of their vulnerability [Table 18.1], and

**Table 18.1** Resources for self-assessment

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| Maslach Burnout Inventory (MBI): The MBI is the leading measure of burnout; it is considered the gold standard for healthcare professionals. It is a self-administered questionnaire that can be used by individuals or groups. The MBI measures three dimensions of burnout: emotional exhaustion, depersonalization, and personal accomplishment. The MBI is proprietary and carries licensing fees, thus posing challenges for repeated use. It costs $15 for a personal report for healthcare professionals (costs $2.50 for online completion with a minimum of 20 forms; $200 for group completion). Available at https://www.mindgarden.com/117-maslach-burnout-inventory |
| The Mayo Clinic's Physician Well-Being Index (PWBI): The PWBI is a recently developed web-based tool devised specifically for physicians and medical learners. It evaluates multiple dimensions of distress using nine questions designed to measure burnout. In addition to measuring burnout, it provides valuable resources when needed and tracks progress over time to promote self-awareness. A mobile app is also available for tracking. It has been externally validated. It takes 5 minutes to complete. It is free for individuals (license fee for organizations).<br>Available at https://www.mededwebs.com/employee-well-being-index |
| The Physician Wellness Inventory (PWI): The PWI has 14 items organized into three subscales: career purpose, cognitive flexibility and distress. It is yet to be widely validated. It takes 2 minutes to complete. It is free.<br>Available at http://www.promoteyourwellness.com/PWI.docx |
| The Professional Quality of Life (ProQol) Measure: This is the most commonly used measure of the negative and positive effects of helping others who experience suffering and trauma. The ProQOL Measure has sub-scales for compassion satisfaction, burnout, and compassion fatigue. It is an indirect measure of wellness. It takes 5–10 minutes to complete. It is free [author must be credited]. Available at http://www.proqol.org/Home_Page.php |
| The Quality of Life Linear Analog Scale Assessment (LASA): The LASA includes five simple items, each of which targets a specific domain of quality of life. Specific domains include physical well-being (i.e., fatigue, activity level), emotional well-being (i.e., depression, anxiety, stress), spiritual well-being (i.e., sense of meaning, relationship with God), and intellectual well-being (i.e., ability to think clearly, concentrate). It has been validated in multiple physician populations. It takes 5 minutes to complete. Multiple versions exist. http://www.jpsmjournal.com/article/S0885-3924[07]00463-0/pdf |

**Table 18.1** (continued)

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| The Stanford Professional Fulfillment Index (SPFI): It measures burnout and professional fulfillment in physicians. The SPFI is a 16-item survey comprised of three domains: work exhaustion and interpersonal disengagement which together measure burnout, and professional fulfillment. It also includes items measuring self-reported medical errors. It takes 10 minutes to complete. It is yet to be widely validated. It is free for individuals and not for profit organizations using it for research or program evaluation. Publicly available in article: Trockel M, Bohman B, Lesure E, et al. Acad Psychiatry. 2018; 42:11. https://doi.org/10.1007/s40596-017-0849-3 |
| The American Medical Association utilizes the Mini-Z Wellbeing Survey (also known as Zero Burnout Program survey) to evaluate for burnout. The Mini Z comprises of 10 items and one open-ended question which assess satisfaction, stress, burnout, work control, chaos, values alignment, teamwork, documentation, time pressure, excess electronic medical record (EMR) use at home, and EMR proficiency. Available by selecting "survey" at https://edhub.ama-assn.org/steps-forward/module/2702509#resource |

attempt to engage in preventive measures that concurrently incorporate the various facets of their professional ecosystem.

As learners progress from training to licensed practice, the importance of a continued systemic approach and advocacy cannot be underscored enough. As noted in Chap. 10, "Recognizing Compassion Fatigue, Vicarious Trauma, and Burnout," the most resilient physician cannot sustain their resilience in the face of an organizational climate of heightened administrative demands, limited autonomy, and lack of organizational wellness stewardship.

## The Medical Ecosystem: Personal Scan

The personal scan begins by examining individual risk factors and wellness reserves, with examples given of well-studied tools one can use to evaluate their individual risk profile [see Table 18.2]. The needs assessment ultimately addresses the question: how well are you "inoculated" against burnout (see Fig. 18.2).

**Table 18.2** Booster shots: Resources for intervening at the individual level

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| Remembering the Heart of Medicine http://theheartofmedicine.org/. This site is dedicated to the well-being of physicians and utilizes online discussions, storytelling, and journal writing, among other literary tools to provide structure, support, and a community of belonging. |
| Resilience in the Era of Sustainable Physicians: An International Training Endeavour [RESPITE] https://respite.machealth.ca/. The RESPITE initiative is an international, multisite, e-teaching endeavor currently offering an optional resilience curriculum, with a focus on two goals: increased self-knowledge and integrating new [healthier] lifestyles. Through case studies, guided exercises, and suggested resources, the RESPITE program guides residents to gradually adopt and integrate healthful practices over the course of training. |
| The Well-Being Index https://www.mededwebs.com/well-being-index. This Index was invented by the Mayo Clinic, with portals categorized by stage of training from medical student to residents and fellows to physicians in practice. The Index is anonymous and consists of web-based tools that evaluate multiple dimensions of distress using nine questions designed to measure burnout, provide valuable resources when needed the most, and track progress over time in order to promote self-awareness. In contrast to the MBI, the Well-Being Index goes beyond identifying burnout and focuses instead on finding ways to increase professional satisfaction and fulfillment. |

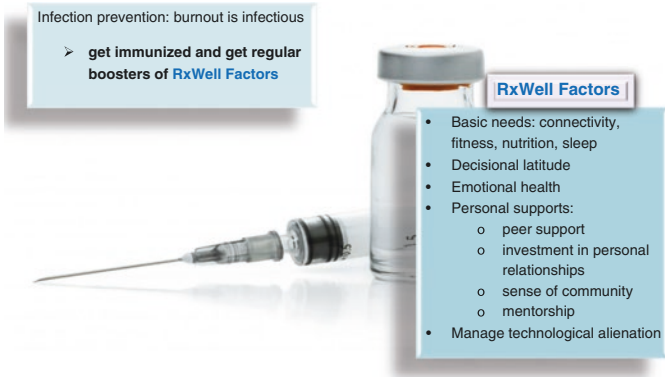


**Fig. 18.2** Individual-level factors associated with wellness reserves

If your reserves are low, consider utilizing one or more of the self-help resources listed in Table 18.2 for booster shots, recognizing that individual-level interventions are more effective when combined with organizational-level interventions [5, 9, 13, 14]. Institutional and organization-directed interventions that result in reduced administrative burden, increased contact time with patients, increased flexibility, and greater professional autonomy are associated with a moderate but substantial reduction in physician burnout [5, 9, 13–15] .

## The Medical Ecosystem: Cultural Scan

The culture of medicine, particularly the hidden curriculum, constitutes an important factor in the evolution of burnout. Training in medicine is not confined to the transmission of clinical knowledge and skills. Added to this overt curriculum is the accompanying transmission of attitudes, norms, values, and expectations which are collectively described as the *hidden curriculum* [24, 27–28]. The hidden curriculum is a silent but potent influence on the art of medicine, as it is in fact a long-term process of vocational socialization and ritualized professional identity formation [24, 27]. As such, approaches to burnout should attempt to adjust the dial on the hidden curriculum. (See Chap. 16, "Steps Towards Building a Culture of Humanistic Teaching and Medical Practice," for further details.)

With the increasing attention to wellness and burnout, there is some degree of tension between the hidden curriculum and the formal curriculum. On the one hand, medical education and training programs espouse wellness and continue to increase its presence in the curriculum. On the other hand, trainees may receive opposing messages in the form of praise for heavy workloads, normalization of long work days, and displeasure when an unplanned absence is necessary for illness. In addition, trainees frequently observe "dedicated" physicians working extremely long hours, with many working more than 60 hours weekly [15]. This is uncommon in the general population but is quite prevalent among physicians [15].

The hidden curriculum can foster unhealthy and inappropriate competitiveness among medical trainees [25]. This can create difficulties functioning as effective team members with shared goals. Many trainees can readily call to mind clinical scenarios in which supervisors teach in an interrogative style that engenders competition between trainees trying to prove themselves and at the same time avoid embarrassment. This style of teaching by humiliation in turn reinforces already high levels of perfectionism and intolerance for perceived weakness, making it less and less likely that a learner in need is likely to self-identify and seek help [23, 25, 29]. Unfortunately, although declining, humiliation endures as a clinical teaching tool, and bullying persists in the profession, with both contributing to burnout [29, 30]. This persisting culture of blame and shame is quite concerning as shame is linked to anxiety, depression, addiction, and suicides in the profession [29, 31].

The hidden curriculum is an effective vehicle of transmission of societal messages about origins of illness (moral vice versus biology), types of illness (mental versus physical), relative value of medical specialties, and views of interprofessional colleagues, thus necessitating systemic interventions to address the shame and stigma in the profession [26, 29]. Gofton and Regehr argue that what we do not know we are teaching plays a more important role than the formal curriculum in transmitting the values, ideals, and conditions of the medical profession and individual specialties [28]. As such cultural-level interventions for stigma are complex and require a candid examination of the informal curriculum. Let's begin with an exercise that briefly examines the hidden curriculum in your immediate professional ecosystem.

**Skill-Building Exercise: Pause and Reflect**

*Work ethic as kindling for burnout*

As a medical resident, take a few minutes to reflect on your rotations in the past academic year. As you reflect on these questions, consider the personal cost of your career choice,

your role in driving the cost, and personal choices you can make to balance the cost with the joys of medicine.

*In sickness and health*

Have you or a fellow learner attended work while ill on your current rotation? Do you feel obligated to attend work "unless you are at death's door"?

Considering the current rotation you are on, what would be your supervisor's reaction to an unexpected absence for illness? How do you feel about absences for psychological distress? Do you think there would be repercussions if you disclosed psychological distress as the reason for your absence?

*Self-evaluation*

In the past week, have you experienced performance-related feelings of anxiety, inferiority, or dysphoria (generalized dissatisfaction with life)? If you have, do you experience any shame about these feelings? Are you comfortable with sharing such distress with colleagues? How do you think your peers would receive a request for support in this regard?

*Resource utilization*

What resources does your program have for learners struggling with these problems? What is your level of comfort in utilizing your training program's resources in this regard? Has your training program mandated recurring dedicated time for wellness and self-development?

Responses to the questions above may reveal as much about your internalized professional values as they do about the hidden curriculum in your local professional ecosystem. Engaging in this exercise should give you a window into your current vulnerabilities and their potential trajectory as you progress toward independent practice. Responses that include shame and self-denial underscore the necessity of adapting a wellness framework early. Timely and meaningful wellness practice that continues over our careers allows the delivery of more humanistic care and is a core facet of professionalism

**Skill-Building Exercise: Pause and Reflect**

*Reflecting on internalized stigma and the hidden curriculum*

Consider a routine call shift during a non-psychiatric rotation. Your pager goes off and the request is to see a patient on the psychiatric ward.

- What is your initial reaction?
- Examine the positive and negative thoughts you have in response to the consult. If you are wary, why is this?
- Have you ever tried to pass off such a consult to a more junior trainee or someone else on your team?
- Do your eyes linger on the psychiatric diagnosis of patients you are seeing for non-psychiatric reasons?
- Have any supervisors redirected consults to you for patients with "social problem" as part of their chief complaint?

If you answered *yes* to some of the questions, your starting point is clear: internalized stigma and some negative messages in the hidden curriculum have taken a very comfortable seat at your dinner table. With these internalized messages, consider how difficult it is to seek help for the psychological distress associated with burnout. Consider how this in turn poses a barrier for other physicians in crisis. Stigma and shame drive burnout to the margins, but this is risky given the comorbidities of substance use, anxiety, depression, and suicide [7, 8, 11, 12, 29–32, 34].

Recommendations for addressing the cultural elements of burnout should begin upstream. At the undergraduate medical education level, the culture of competitiveness needs to be examined to retain healthy aspects and eradicate toxic aspects.

Similarly, efforts to de-normalize overachievement and perfectionism can play a role in reducing overwork and chronic stress given the important contributory role of each factor as discussed previously. To this end, medical education and training programs can shape the formative climate to further improve psychological safety.

Shaping the formative climate can begin as simply as a more mindful approach to the way in which academic accomplishment is recognized [12]. Recurring protected time for self-development and the promotion of a wellness culture within the curriculum are both important in shaping learners' habits over the course of training [12, 21]. Empowering learners with greater knowledge about how to navigate the health system and advocate for change may also help to combat feelings of powerlessness that contribute to burnout [33]. Finally, the culture of silence about mental health needs to be eliminated as substance abuse, anxiety, depression, and suicide occur in the profession at rates well above that in the general population [10, 35]. Suicides constitute a collective loss and failure, yet in a survey of Canadian medical undergraduate programs in 2018, less than 10 of the 17 programs surveyed (there are 18 programs in total) had an existing policy for responding to a suicide [34].

**Did You Know?**

- *Suicide is the only cause of mortality that is higher in physicians than non-physicians [35].*
- *Relative to the general population, male physicians are 40% more likely to die by suicide, while female physicians are more than twice as likely to die by suicide [35].*

Cultural approaches to burnout can take many forms and should traverse all levels of the medical ecosystem, as described in more detail in subsequent sections. In terms of recent suggestions, there are calls to bring back the doctors lounge as a space for physicians to debrief about their work or personal lives, dis-

cuss challenging cases, celebrate achievements, and collaborate on project ideas [36–37]. However, this must be done with caution as the doctors lounge of old was not entirely a psychologically safe space. To this end, the doctors' lounge should serve the purpose of building community at work more mindfully, as proposed in Fig. 18.3 [36].

Rehabilitating the doctor's lounge should proceed with caution so that it does not become a forum for the disillusioned and detached to vent spleen without solutions, as burnout can be contagious [31]. Similarly, it will be important to avoid creating a space that reconstructs the hierarchy inherent in medicine, a forum that allows bullying, or asserts difference and inferiority.


**Fig. 18.3** The doctors' lounge as a place of respite and support

The new era of the doctors' lounge should have at its heart a space that promotes connectedness, addresses loneliness in the era of increasing point of care technology and virtual care, and builds camaraderie across specialties in a space that recalls the common denominator of being physicians [36, 37].

Thus far, the authors have addressed individual-level aspects of the medical ecosystem, while acknowledging that this is situated within the broader context of organizational and systems level factors. Appendix 18.1 addresses the latter levels and provides recommendations for intervention at these levels. While an individual medical trainee or practicing physician reading the recommendations may not be able to implement these systemic-level approaches, there is a crucial role for advocacy to implement change at the organizational and systems level (see Chap. 17, "Pushing Back: Recognizing the Need to Advocate for Systemic Change in a Sustainable Medical Field," for further details).

## Reexamining the Three Dimensions of Burnout

In keeping with the World Health Organization (WHO) conceptualization of burnout, this section will address resources for the three dimensions of burnout as the chief complaint: (1) feelings of energy depletion or exhaustion; (2) increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and (3) reduced professional efficacy [1]. This triad of features does not account for comorbidity, which would be remiss given the elevated levels of comorbid mental health features identified in medical students, residents, and practicing physicians to date [7–10, 34]. Although distinct from burnout syndrome, anxiety disorders, depression, sleep disorders, and suicidal ideation are important comorbidities to be considered whenever a medical trainee or practicing physician is experiencing or at risk for burnout.

The subsequent section will introduce suggested resources, although this is not an exhaustive list, and it is recommended that learners always begin with their program's wellness office resources. Symptoms and features of each burnout dimension are extracted from the burnout inventory tools described in Table 18.1.

## Depletion

Depletion is characterized by physical and emotional exhaustion. As such, recommendations for depletion center on restoring and promoting vitality by prioritizing wellness and optimizing self-care. Although most of the resources listed here are for individual-level use, more robust effects are achieved in combination with organizational- and structural-level interventions that offer flexibility, leadership support, and organizational stewardship [5, 9, 13–15, 38].

***Symptoms and features*** Emotional exhaustion, "feeling used up," lack of enthusiasm for work, sense of dread on considering work, chronic fatigue, neurocognitive and neurovegetative symptoms (e.g., fatigue, headaches, gastrointestinal upset, sleep disturbance).

***Comorbidity*** Anxiety-spectrum disorders, depression, suicidality, chronic stress-related conditions (e.g., cardiovascular disease, hypertension, elevated cholesterol, insomnia, increased fatigue, depressed immune system, stroke, overweight and obesity, type 2 diabetes mellitus).

***Suggested Rx*** Prevention is the best medicine. Begin by attending to the very basics of daily living: nutrition, rest, exercise, and preventive healthcare appropriate to age and stage of life. It can be easy to relegate self-care to the sidelines because of an increasing workload and multiple demands on time, particularly as residents have limited professional autonomy but must balance clinical rotation duties with their education and training program's parallel requirements, and personal life obligations.

If you have not already done so, explore your program's wellness office and the wellness portal of your state or provincial residents' association. As information pertaining to program and regional wellness associations constitutes a core part of the residency orientation process, they will not be explored here. Rather, the following resources are available in addition to those available through your program and regional residency association. The

resources are categorized by the principal feature of depletion, and most are virtual resources in order to facilitate access. In keeping with starting with the basics, the authors focus on apps for tracking sleep, exercise, diet, and emotional well-being.

***Sleep*** These apps are focused on supporting healthy sleep hygiene. They are focused on relaxation and stress-reduction to ward off insomnia. Most smartphones also have built-in variations of a sleep tracker app for tracking sleep. Maintaining healthy sleep routine can increase productivity and improve mood.

- AutoSleep/Sleep as Android
- Best Sleep Hygiene
- Calm
- CBT-i Coach
- Nature Sounds Relax and Sleep
- Sleep Time

***Lifestyle*** There are countless opportunities to track fitness and diet with smartphones. Consider using reminders or a medication reminder app to ensure you take medication on time. Keep track of your spending. These apps can function to support basic activities and also reduce stress.

- Lifesum
- Mint: Personal Finances & Money
- MyFitnessPal
- MyTherapy: Medication Tracker
- Stress management https://stressremedy.com/

***Mental and emotional well-being*** Collectively these apps are designed to support mental and emotional health. They use various modalities [cognitive behavioral therapy (CBT), dialectical behavior therapy (DBT), acceptance and commitment therapy (ACT)] that can be used proactively to address the mental and emotional comorbidities of burnout or as part of a recovery plan if burnout is taking a toll.

- CBT Anxiety Reliever
- CBT Thought Record Diary
- Depression CBT Self-Help Guide
- eMoods
- Happify
- HealthyMinds
- IMoodJournal
- MindShift
- MoodKit
- MoodTools – Depression Aid
- Pacifica
- Self-help Anxiety Management
- Stop Panic & Anxiety Self-Help
- Whats UP

***Meditation and Mindfulness*** These resources draw on meditation and mindfulness principles, both of which have shown benefit in minimizing exhaustion, increasing compassion, and reducing detachment [5, 26, 39]. It is also possible to find many different guided meditations on YouTube. They offer education related to meditation, mindfulness, and stress reduction as well as guided activities.

- HeadSpace
- OMG. I Can Meditate!
- Relax & Rest Guided Meditations
- Rootd
- Ten Percent Happier
- Stop, Breathe, Think
- RESPITE https://respite.machealth.ca/

While smartphones and digital technology offer countless opportunities for supporting wellness, they should be used mindfully with respect to the duration of screen time. Consider making use of the Screen Time monitoring feature on your smart device. Consider using device settings to schedule time away from your smart device or set time limits on your use. Optimize time spent

engaging with your personal and professional supports. "How to Break Up with Your Phone" by Catherine Price is a short read on how to develop a healthier relationship with smartphones and devices.

Wellness includes enjoyment and pleasure. Engage in simple but pleasurable activities to take your mind off the challenges of medicine and recharge, including the following [40]:

- Engage in restorative activities: hobbies, spiritual development, travel
- Engage in regular physical activity
- Schedule time to enjoy nature
- Prioritize positive relationships with friends and family. Limit negative relationships;
- Consider arts and crafts to decompress: adult mindfulness coloring books, art therapy if available and accessible to you
- Engage with your local community: leisure events, farmer markets, festivals
- Go to the movies, a museum, or gallery
- Stimulate your mind with nonacademic material: do a puzzle, do Sudoku, enjoy a novel, take a skill building class
- Take relaxation seriously: consider free guided mindfulness and relaxation exercises https://stressremedy.com/

## Detachment and Depersonalization

This dimension of burnout manifests with disengagement from work and from oneself, and may extend to disengagement in the personal realm. The previous pride taken in quality of work and the ability to derive meaning from clinical care are eroded, added to which little satisfaction is derived from accomplishments. The inability to internalize one's accomplishments fosters cynicism, which further creates depersonalization and an impersonal approach to work. Recommendations for detachment center on restoring and promoting engagement.

***Symptoms and features*** Anhedonia (reduced ability to experience pleasure) that is largely prevalent during clinical hours and/or related activities and may bleed outside the work context, compassion fatigue, callousness during clinical encounters, cynicism, decreased concentration, functioning mechanically, irritability, inner emptiness and numbness, negative internal response on thinking about the work setting, pervasive cynicism on taking patients' history or listening to clinical accounts, callous or impersonal response toward patients and coworkers, hostility toward patients, revision of values.

***Comorbidity*** Depression, presenteeism (attending work and performing suboptimally due to illness), substance use, interpersonal casualties (relationship failures at work and in the personal realm, social withdrawal), psychological distress disorders (See Chap. 10, "Recognizing Compassion Fatigue, Vicarious Trauma, and Burnout"), suicidality.

***Suggested Rx*** The restoration of humanity in medicine is essential, as the humanistic approach is a protective factor for physicians and patients alike. Prevention and interventions should ideally stratify the ecosystem for greater effect.

**Reach for help** Consider your local and regional organizations for physician health programs and be aware of additional resources:

- https://www.cma.ca/provincial-physician-health-program
- https://edhub.ama-assn.org/steps-forward/pages/professional-well-being

**Reclaim the joy of medicine**

- Recultivate meaning in work by establishing community at work
- Bring physicians back to the bedside, and away from the EMR and administrative medicine
- Consider the use of narrative medicine groups to regain joy and meaning in care

**Recultivate self-compassion**

- Utilize mindfulness tools available through your work, training program, or local chapter of the medical association
- Explore free online self-compassion exercises and resources for ongoing use:
  - https://self-compassion.org/category/exercises/
  - https://mindfulnessexercises.com/free-online-mindfulness-courses/
  - https://mindfulnessexercises.com/10-mindfulness-exercises-for-work-and-purpose/
- Explore and invest in self-compassion courses as part of ongoing wellness plan:
  - http://www.mindfulselfcompassion.ca/
  - https://www.mindspacewellbeing.com/services/workplace-wellbeing/
  - https://www.mindfulnessstudies.com/personal/mindful-self-compassion/
  - https://ottawamindfulnessclinic.com/mindful-self-compassion/
  - https://mindfulnesshamilton.ca/resources/courses-programs
  - https://centreforpeopledevelopment.ca/course-offerings#compassion-resilience
  - http://www.mindfulnessinstitute.ca/
  - https://www.compassioninstitute.com/classes/
  - http://centreforcompassionandwisdom.com/programs/
- Bibliotherapy
  - Self-Compassion by Kristin Neff, Ph.D.
  - *The Mindful Path to Self-Compassion* by Christopher Germer, Ph.D.
  - The Space Between Self-Esteem and Self-Compassion; a TED talk by Kristin Neff

**Address the hierarchical environment of medicine as a barrier to self-help:**

- Acknowledge trainees and new team members wellness needs, and instill wellness as a component of professionalism

- Prioritize trainees' wellness in order to produce more engaged physicians as this correlates with provision of quality care to their assigned patients

**Foster individual wellness by engaging in self-care across multiple domains:** fitness, nutrition, emotional health, preventive care. When available, utilize organizational resources for self-care domains and in their absence, consider advocating for them:

- Free or subsidized organizational fitness amenities to facilitate access
- Cafeteria provision of affordable healthy nutrition
- Provision of healthy nutrition options after hours for on call and night shift staff
- Wellness committee funded nutrition for rounds
- Team retreats with a dedicated wellness component

**Invest in staff reengagement**

- Examine organization-specific drivers of disengagement and engagement
- Promote and bolster engagement factors

**Organizational psychological stewardship and wellness programming**

- Evaluate psychological distress
- Identify hot zone clinical units within the organization and examine the drivers of psychological distress
- Refine and revise wellness initiatives to identify those that are more effective

**Recognize and counter imposter syndrome as disbelief in competence fosters cynicism**

- Celebrate wins and accomplishments, no matter how small
- Utilize team huddles and community meetings to acknowledge wins, check in, debrief, and elicit support

## Reduced Professional Efficacy

This dimension of burnout manifests with decreased effectiveness at work, a sense of decreased professional efficacy, decreased personal accomplishment, and reduced work satisfaction.

***Symptoms and features*** Diminished capacity for joy and meaning in work, impaired interpersonal interactions with colleagues, prolonged and/or reductionist approach to work tasks, negative cognitions and self-appraisal with pervasive feelings of incompetence, inefficiency, and a deep sense of inadequacy. Features at the organizational level include decreased productivity, decreased quality of care, attrition, and physician turnover [5].

***Comorbidity*** Absenteeism, presenteeism, substance abuse, reactive depression, interpersonal casualties (relationship failure, social isolation), psychological distress disorders and chronic stress-related conditions (See Chap. 10, "Recognizing Compassion Fatigue, Vicarious Trauma, and Burnout"), suicidality.

***Suggested Rx*** As with other dimensions of burnout, prevention and interventions for addressing professional efficacy should stratify the ecosystem for lasting effect. As such, readers in administrative and leadership positions are well placed to effect change, while learners and staff physicians are encouraged to advocate and act as early adopters in so far as feasible within their immediate clinical setting. If the cost of wellness adoption appears unwieldy, then consider the very costly impact of physician turnover: the financial ramifications of physician turnover is estimated at two to three times a physician's salary as measured in lost patient-care revenue and efforts to hire and onboard new physicians [15, 38]. Professional efficacy should be prioritized by organizations as it is directly related to patient outcomes and is a sizeable cost driver.

**Adopt physician wellness as a quality indicator and include it in the organizational scorecard:**

- Physician wellness metrics should be identified, measured, and monitored as suggested in the preceding burnout dimensions.

- Organizations should strive to be physician wellness champions for their own benefit as this attracts quality and retains quality among their physician workforce, while concurrently allowing recognition by regional and national health authorities seeking to identify best practices and scorecard standards.
- Ministries of health and medical associations should hold organizations and leaders accountable for burnout metrics by publicizing organizational scorecards.
- Consider embedding psychological distress assessment tools within the physician reappointment platform in such a way that physicians can anonymously complete this segment and receive immediate feedback.

**Prioritize workplace psychological safety, wellness leadership, and stewardship:**

- Appoint a wellness officer by department or clinical unit.
- The wellness officer's mandate should include health promotion, wellness, and operationalization of interventions linked to physician wellness metrics.
- Wellness officers should be appointed by work unit rather than a single figurehead as a sole officer cannot practically address the burnout features specific to each clinical unit in the organization.
- Incorporate occupational psychological distress assessment tools and linked resources in the wellness program.

**Provide internal capacity building to boost herd immunity:** Organizational efforts to continually build capacity and enrich professional efficacy can boost morale and bolster the sense of community at work, thereby fostering long-term engagement.

**Provide and support professional and interpersonal development programs:**

- Invest in on-site continuing medical education (CME) opportunities, including interdisciplinary staff rounds to bolster interprofessional connections.
- Fund a small honorarium, scholarship, or stipend for attending high value CME opportunities off site.

- Promote growth through fellowship opportunities: develop or partner with clinical fellowship programs for career renewal
- Partner with medical education and training programs to implement and support leadership development as a longitudinal aspect of medical education and training

**Reduce the administrative burden on physicians thus increasing the available time for direct patient care as this is predominantly where the joy of medicine is derived:**

- Consider budgeting for a more seamless EMR system, scribes, and administrative support staff so that clinicians are less occupied with clerical tasks
- Invest in more user-friendly EMR systems with enhanced communication abilities (e.g. point of care technology with direct feeds to the EMR)

**Acknowledge and celebrate staff in meaningful and recurring ways:**

- Recognize small achievements and contributions
- Invest in more community building activities that go beyond the traditional annual staff barbeque and staff appreciation event

This chapter has examined recommendations and resources to address physician burnout. However, this is not an exhaustive list, and there is ongoing generation of new resources, which one can keep abreast of through national and local professional associations of resident physicians, physicians in practice, and the offices of learner wellness within Canadian and US faculties of medicine. In addition, this is an exciting time in terms of the establishment of a number of interactive virtual wellness hubs which increase accessibility, particularly for those training in clinical sites that are slower to effect change. For those more directly involved with spearheading change, there are some cautionary lessons to consider. For one thing, the health of physicians is big business, with any number of wellness vendors attempting to market wellness programs to healthcare institutions. These wellness programs and in services should be carefully examined before precious resources

are allocated to them. Specifically, wellness is not a one-shot deal, and a few sessions of coaching will not have any meaningful impact on wellness metrics. Consider the longevity of the proposed program, availability of take home tools for ongoing use, opportunity for recurring booster sessions, and the adaptability of the program across clinical settings within the organization.

**Key Takeaways**

- Burnout is an occupational hazard that is prevalent in the medical profession. It is important to recognize the contributory factors and the antidote as being predominantly systemic rather than individual, although there is a shared responsibility in addressing the problem [5].
- Tackling the burnout problem requires an ecosystem approach that can begin very simply: adjust the dial on the hidden curriculum in medicine. Acknowledging internalized stigma and the culture of silent stigma in medicine is the first step toward psychological safety in the profession. Cultivating community and collegiality in medicine is only possible when the hidden curriculum is addressed.
- Changes are required across the medical ecosystem, from the individual to the immediate clinical setting to organizational and societal levels of interaction.
- In terms of the clinical setting, the role of community and team is essential to herd immunity, with team members requiring booster shots as part of a sustained commitment to wellness.
- At the organizational level, the business case for eradicating burnout is evident: a well workforce is required in order to deliver cost-effective and humanistic care, with the best patient outcomes reliant on a thriving and engaged physician workforce [5, 11, 15, 19, 41].
- Physician engagement and satisfaction can buffer against the professional detachment and professional inefficacy dimensions of burnout [15].

- At the regional and national level, the collaboration between health associations and health ministeries is required for continued progress. As healthcare funding becomes more meager, the very sizeable cost-savings associated with healthy physician workforces and well workplaces will ideally exert pressure on organizations with poor scorecards [41].
- This chapter has introduced a number of recommendations and resources, which can be difficult to effect at the level of the individual trainee or physician in practice. However, one cannot advocate for change or contribute to the conversation without an understanding of the breadth of angles from which organizations and the profession can begin to douse the burnout epidemic. Physician burnout is best addressed when viewed as a shared responsibility between medical education and training programs, healthcare systems, and individual physicians [5, 12, 15].
- Wellness is not easy; it requires commitment, skill development, and ongoing work throughout one's career, but these are exciting times of innovation and resource development, thus current and successive waves of learners will have access to a rapidly bourgeoning array of wellness resources.
- Residents and medical students are in a unique position to hone their leadership skills through leadership development opportunities available in the contemporary medical education and training curriculum. These skills will be invaluable in advocating for and collaboratively implementing wellness stewardship and burnout prevention programs as they advance in their careers. Furthermore, as wellness continues to be integrated into the medical education and training curriculum, the tension between accessing wellness and meeting academic obligations will likely be ameliorated.

## A Pan-optic View of the Medical Ecosystem

The most powerful interventions to reduce burnout are those that improve compassion satisfaction, workflow efficiency, teamwork, and leadership [9, 15]. As such organizational-level interventions that attempt to align mission and vision with physicians' work make for the most significant and durable impact on burnout [9, 15]. If your education, training, or clinical setting solely focuses on individual level interventions such as wellness activities, it inaccurately suggests that the problem is individual rather than a systemic issue. This is hazardous, as it suggests that individual physicians need to work harder to prevent burning out.

| Intervening at the Environmental Level |
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| Environmental interventions should take a systemic view and address the key factors associated with burnout, which include administrative demands and unwieldy workflow, excessive and often redundant documentation that largely addresses liability rather than clinical communication, reduced direct contact with patients, and deep seated expectations of herculean productivity [15]. |
| Systemic interventions that are tokenistic or focused on symptoms alone have limited utility and waste limited resources. For example, numerous institutions have implemented resilience-building tools, physician engagement surveys, physician recognition by way of annual doctors' day barbeques or golf outings, and the addition of crisis and suicide help lines, but these are far from a systemic cure [42]. Rather, these organizational interventions focus on symptoms rather than on core issues, and as such offer limited solutions. |
| Licensing bodies constitute a significant stakeholder in the issue of burnout as they obligate prime performance and wellness in order to best serve patients. While physicians do aspire to *primum non nocere*, the fulfillment of this principle by the standards of today's regulatory authorities may in fact constitute a source of friction in the conversation about burnout [43]. Prescribing that thou shalt not burnout to physicians predictably interferes with help seeking as self-identification may jeopardize licensure [11, 23, 25, 43]. Accordingly, the recommendations and resources subsequently suggested account for these competing contributors and facets of physician burnout. While an individual medical trainee or practicing physician reading these recommendations may not be able to implement these systemic-level approaches, there is a crucial role for advocacy to implement change at the organizational and systems level. |

| Intervening at the Environmental Level |
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| ***Local ecosystem (organizational level) changes*** [4, 5, 9, 11, 15, 26] |
| Align staff wellness with organizational mission |
| Institute physician wellness and work satisfaction as quality indicators and identify internal benchmarks |
| Identify and implement standardized metrics that will enable an assessment of the impact of organizational efforts to reduce and eliminate burnout |
| Provide safe spaces for physicians and health delivery partners to identify need and utilize internal resources for support |
| Assess the problem |
| Implement routine staff engagement surveys with responsive interventions to address findings. Incorporate standardized tools like the ProQol Measure, WBI, or MBI into these appraisals |
| Identify and utilize standardized metrics that allow ongoing measurement of the impact of efforts to reduce and eliminate burnout |
| Identify, implement, revise, and refine based on findings of serial measurements |
| Build community and foster belonging |
| Move beyond annual staff appreciation days and invest in recurring social events |
| Provide common break areas in addition to role-specific break spaces |
| Utilize interprofessional team building exercises and give recognition to teamwork |
| Provide interdisciplinary break rooms to foster communication and team liaison outside clinical tasks |
| Acknowledge the contributions of all staff including learners |
| Implement more tangible and more frequent medical trainee recognition |
| Implement wellness stewardship as a cornerstone |
| Appoint wellness officers across the institution, establish a central wellness committee, and integrate the wellness officers' feedback into organizational development and quality improvement efforts |
| Provide more robust psychological stewardship programs (See Chap. 10, "Recognizing Compassion Fatigue, Vicarious Trauma, and Burnout") that invite staff use without fear of penalty in staff members endorsing burnout and psychological distress |
| Promote professional development |
| Build capacity through leadership development, internal continuing medical education programs, internal mentorship opportunities, and professional support programs |

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| Intervening at the Environmental Level |
| Develop or partner with clinical fellowship programs for career renewal |
| Minimize administrative interference with physician autonomy so that physicians can increase direct patient contact time and the time available to attend educational rounds |
| Recruit with the intention of retention |
| Develop more robust physician onboarding processes and resources, particularly for newly licensed physicians. |
| Position interdisciplinary occupational wellness as an organizational target. |
| Evaluate and monitor the administrative burden on trainees and staff physicians. Identify methods to download unnecessary or excessive administrative tasks from physicians and clinical staff to non-clinical staff. Some institutions have intervened by way of professional scribes and enhanced clerical staff capacity. |
| Evaluate the organization's EMR infrastructure for user-friendliness, with the goal of minimizing the volume of documentation, and upgrading or eradicating cumbersome aspects of the EMR. |
| Provide a work climate of growth and safety across emotional, physical, psychological, and spiritual domains. |
| ***Regional ecosystem*** [5, 15, 43] |
| Continued increase in regional medical association advocacy for physician safety in identifying and seeking help for burnout. |
| Maintain a repository of data on organizational health to enable identification of regional organizational champions and detection of effective practices. |
| Continued quality improvement of the wellness curriculum in medical education and training programs; this should incorporate periodic assessment of learners for indicators of psychological distress and burnout. |
| Develop more robust physician health programs and build on identified best practices. |
| Provide direction and encouragement to healthcare institutions seeking to address physician burnout; identify and acknowledge organizational champions. |
| ***National ecosystem*** [4, 5, 9, 11, 15, 23, 43, 44] |
| Change the conversation at the societal level: increase the recognition of toxic effects of herculean expectations of physicians by health consumers and by physicians themselves |
| Maintain a repository of data measuring physician health, well-being, and burnout over time to allow action-oriented appraisal of national trends |

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| Intervening at the Environmental Level |
| Educational reform |
| Continued work on national standards for trainee duty hours so that the same high volume of work is not merely shifted into more compressed duty hours |
| National standards for suicide prevention and mental health promotion across the trajectory of medical education and training |
| Denormalization of perfectionism and overachievement ➔ shift the mentality of viewing overwork and burnout as badges of honor and rites of passage |
| Continued appraisal, recognition, and reform of the hidden curriculum |
| Increased industry oversight to promote increased collaboration, product usability and durability from EMR vendors as a number of EMR products are unnecessarily complex |
| Enhance the dialogue with licensing bodies with regards to physician self-identification without undue penalization. Make it safe to seek assistance without penalty |
| Reevaluate and redesign the physician complaints investigation process by licensing authorities to reduce the duration and undue strain inherent in the process |

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