Mastering Resilience in Oncology: Learn to Thrive in the Face of Burnout

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OVERVIEW

Oncology clinician burnout has become a noteworthy issue in medical oncology directly affecting the quality of patient care, patient satisfaction, and overall organizational success. Due to the increasing demands on clinical time, productivity, and the evolving medical landscape, the oncology clinician is at significant risk for burnout. Long hours in direct care with seriously ill patients/families, limited control over daily responsibilities, and endless electronic documentation, place considerable professional and personal demands on the oncologist. As a result, the oncology clinician’s wellness is adversely impacted. Physical/emotional exhaustion, cynicism, and feelings of ineffectiveness evolve as core signs of burnout. Unaddressed burnout may affect cancer clinician relationships with their patients, the quality of care delivered, and the overall physical and emotional health of the clinician. Oncology clinicians should be encouraged to build upon their strengths, thrive in the face of adversity and stress, and learn to positively adapt to the changing cancer care system. Fostering individual resilience is a key protective factor against the development of and managing burnout. Empowering clinicians at both the individual and organizational level with tailored resilience strategies is crucial to ensuring clinician wellness. Resilience interventions may include: burnout education, work-life balance, adjustment of one’s relationship to work, mindful practice, and acceptance of the clinical work environment. Health care organizations must act to provide institutional solutions through the implementation of: team-based oncology care, communication skills training, and effective resiliency training programs in order to mitigate the effects of stress and prevent burnout in oncology.

Dr. A is 11 years past his medical oncology fellowship training and remains motivated to provide the optimal oncologic care for every patient and family member he sees. He works in a vast urban health care system with a patient panel of 110 to 120 patients per week. Dr. A is affable, has a hardy personality, and is admired by patients, nurses, staff, and his partners. Recently, Dr. A became partner, working long hours to achieve this lifelong dream. However, Dr. A is feeling physically exhausted of late, irritable, sad, and ineffective, as it seems as though his clinical duties never cease. At home, he calls his patients and spends most evenings in front of a computer completing patient notes or orders. Dr. A is unable to sleep most nights and spends little time engaging in leisure activities, such as running or attending his son’s piano recitals. Currently, Dr. A is on in-patient service and gives weekly hour-long lectures to oncology fellow trainees at an affiliated academic hospital. He reports feeling cynical regarding the future to his colleague Dr. Z and questions, “Is any of this worth it?”

Although the oncology clinician, like Dr. A, is adequately equipped and expert at providing benevolent care to patients with cancer and their families, sadly, the greater majority of clinicians like Dr. A fail to provide self-compassion and care when it is most needed as symptoms associated with burnout arise. Dedicated empathic clinicians like Dr. A respond with self-blame when he is unable to perform at optimal levels. Little if any sympathy has been given to the physician especially the oncologist, who, despite best efforts at “toughing it out,” fails to meet all work duties, with his role as physician directly conflicting with his role as parent. As a result, Dr. A feels physically and emotionally depleted, cynical, and ineffective. However, Dr. A may readily face these challenges and address burnout by developing and mastering resilience skills.

A BRIEF OVERVIEW OF BURNOUT IN ONCOLOGY: FOCUS ON RESILIENCE

A comprehensive review and analysis of burnout, including prevalence, symptoms, risk factors, related concepts, as well as individual and organizational interventions for consideration for both the practicing oncology clinician and health care institution was presented at the ASCO Annual Meeting in 2016 and documented. A brief succinct overview of the seminal concepts and issues associated with burnout will be presented in this review with a focus on resilience.

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Burnout: What It Is and Why It Matters

For over a decade now, it is estimated that approximately 45% to 80% of practicing oncologists worldwide in countries such as the United States, Europe, and Australia experience symptoms associated with burnout.\(^5\text{–}14\) Specifically, burnout has been identified as a work-related syndrome that manifests as a result of the interaction between the oncology clinician and the organization.\(^5\text{–}11\) Burnout is characterized by three core symptom domains: physical and emotional exhaustion, cynicism and depersonalization (sense of disengagement), and low sense of professional accomplishment (ineffectiveness; Sidebar 1).\(^5\text{–}14\) These three-dimensional signs of burnout exist along a continuum characterized by distinctly unique symptoms and an overlap of symptoms.\(^5\text{–}14\)

For example, cynicism and depersonalization is traditionally characterized by pessimism or depression (which are also key symptoms of emotional exhaustion), isolation, detachment, and demoralization. Burnout is not a disease. Burnout is a stable, chronic, and insidious process with the initial core physical exhaustion and negative emotional symptoms slowly developing over the course of 1 year as interpersonal and occupational stressors arise and persist.\(^5\text{–}14\)

**Risk Factors**

Multiple individual and organizational factors have been identified as contributing factors responsible for clinician burnout in health care.\(^6\text{–}9,27\) Individual contributors are internal dispositional risk factors consisting of sociodemographic (e.g., younger age; female gender presents with emotional exhaustion, whereas male physicians present with cynicism, single/unmarried marital status, and medical trainee status) as well as personality (e.g., extraversion and conscientiousness) characteristics. Recent evidence revealed that physicians who experience unaddressed burnout are less likely to identify with medicine as a calling, a duty to serve the greater good, adversely affecting both the clinician and patient.\(^27\)

However, given the changing landscape of the present-day health care system, recent research equally centers on specific external, occupational, and organizational risk factors that are important contributors driving oncologist burnout.\(^6\text{–}9,27\) These stressors are work-related factors that do not meet the clinician’s interpretation of the job or work expectations. For example, today, the oncology clinician is exposed to extended work hours, increased time in direct patient care, high occupational demands, lack of control over daily tasks, increased administrative responsibilities, increased time and use of electronic health record systems, limited decision making regarding patient care services, unclear job expectations, lack of social support, educational debt, and the evolving medical landscape.\(^19\text{–}21\)

The identification of these internal and external factors is of extreme importance to help promote and tailor individual, and primarily organizational, interventions designed to prevent and target unaddressed burnout and build resilience.

**When Does It Start?**

Although less understood, it is entirely possible that the risk for burnout for some oncology clinicians begins early in their career during medical training.\(^12\text{–}27\) Several studies demonstrate that residents and medical students have high rates of burnout and disproportionate rates of depression and suicide. Every year, the United States loses approximately 400 physicians to suicide, the equivalent of at least one entire medical school.\(^28\) Though all medical schools provide a course in psychiatry to provide student insight into behavioral issues as related to patients, traditional curricula ignore these issues as related to medical students own development. Residency curricula are even less attuned to these issues. In fact, medical students are at higher risk for some psychiatric disorders than the general population, and suicidal ideation among them is estimated to be a very high 11.2% to 20%,\(^29\text{–}30\) with higher rates among African-American respondents.\(^31\) As a result of stigma, self-reported data likely underestimate these numbers. The prevalence and severity of depressive symptoms increases throughout school and rates of depression are higher in females than their male counterparts.\(^30\text{,}32\) Additional risk factors may include that 31% of medical students have a low sense of personal accomplishment, and 22% demonstrate at risk behaviors for alcohol use.\(^32\) Regarding mental health disorders, an estimated 12% of all medical trainees had probable major depression and 9.2% had probable mild to moderate depression with higher rates among medical students (versus residents) and women.\(^31\) Although medical students demonstrate higher physical quality of life scores than the general population, they also report overall lower mental quality of life scores.\(^3\) Even after completion of formal medical training, physicians continue to have elevated rates of psychiatric

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**SIDEBAR 1. Three Domains of Burnout**

1. Physical and emotional exhaustion
2. Cynicism and depersonalization
3. Ineffectiveness
disorders in comparison with the general population. Of note, male physicians complete suicide at a rate 70% higher than the population at large and female physicians at a startlingly high rate of 400%. To date, suicide is the only cause of death with risks greater for physicians than the general population.15,25,26,29

Burnout itself is not formally diagnosed as a disorder, given it is primarily recognized as an occupational-related condition; however, it shares similar symptomatology with psychiatric disorders such as depression and post-traumatic stress disorders that are identified as precursors to the development of burnout development as well as consequences of burnout.6,10,11,19,21,33-38 The long-term personal and professional consequences associated with unaddressed burnout are of primary concern. Long-term unaddressed burnout may lead to personal consequences such as chronic health conditions (heart disease and obesity) or mental health conditions (depression, anxiety, substance use, and suicide).5,10,11,19,21,33-38 Professionally, long-term burnout leads to diminished quality care, reduced professional satisfaction, and overall accomplishment.19,20

For Dr. A, symptoms of physical exhaustion and negative emotions arise coupled with cynicism as work responsibilities increase and quality family time decreases. His feelings of ineffectiveness in the role of an oncologist adversely affect and directly conflict with his role as father and husband. Such symptoms indicate that Dr. A is in need of developing resilience skills to enhance his quality of life as well as optimize professional satisfaction. This evidence reveals the complex yet salient aspects and issues associated with burnout warranting intervention.

WHAT IS RESILIENCE: THEORY AND SCIENCE
Resilience, specifically psychological resilience, is a multifaceted theory that places emphasis on the human capacity to cope with, overcome, and become strengthened by adversity.39-52 Current clinical and research efforts center on the strengths of the individual, rather than the individual’s vulnerability, as a means of empowerment to rise above adversity, and persevere, resulting in positive adaptation (Sidebar 2). To date, the theory and study of resilience has shifted from a focus on the long-term adverse consequences of trauma to a focus on strength, triumph, and competence to build interventions tailored to foster resilience.42,47,49-51 The concept of resilience grew from within the developmental psychology by the study of children who were able to thrive, survive, and overcome negative abusive childhood environments with poor parenting.43,45 Resilience has also been applied to survivors’ populations of war, trauma, and the military.42,45,48,49

Resilience: Supports Health and Enhances Coping Through a Psychobiologic Mechanism
Current research approaches enhance our understanding of the concept of resilience by placing an emphasis on specific factors that support human health and enhance coping rather than highlighting stress-related factors associated with disease.19,41,42,47,49 Although evidence indicates environmental, neurologic, social and cultural factors are associated with the development of resilience, from a psychobiologic perspective, resilience is believed to be a physiologic positive adaptation to stress as it is associated with maintenance of the following: somatic, autonomic (sympathetic and parasympathetic), and central nervous systems.39,53-55 The specific brain regions associated with resilience involve the prefrontal cortical region and amygdala. Additionally, decreases in the stress hormone cortisol, neuropeptide Y (an anxiety neurotransmitter), and 5-dehydroepiandrosterone prevent initiation of the stress response by decreasing sympathetic nervous system activation.39,53-55 Also, elevated levels of the neurotransmitters serotonin and dopamine (“the reward center”) and neuropeptide oxytocin have also been linked to resilience.39-55 Positive emotions (e.g., happiness; optimism) play a crucial role in the development of resilience. Although it may appear that certain individuals are genetically predisposed to effectively cope with stressful situations, resilience is not necessarily an inherited trait, but rather a skill that can be learned and mastered. Yet, despite this strong scientific evidence, questions surround how to adequately describe and define resilience due to its complexity.

How Is Resilience Defined?
No universally accepted definition of resilience exists given its complex nature encompassing social, psychological, biologic, and cultural factors that act together to determine how the individual responds to stress.8,39,42,50,51 The definitions of resilience continue to advance and grow. However, most definitions and researchers agree that for resilience to be demonstrated, both adversity and positive adaptation must be present.42,44-52 Resilience is a positive response to adversities in the form of everyday minor stressors to key life-altering events. Resilience has been described as both a trait and a process, either present or absent, inherited or learned; however, according to Southwick, a well-known resilience expert, and colleagues,51,47,49 it likely exists on a continuum ever present to differing dimensions across several life domains influenced by psychological characteristics within the stress process. Ideally, resilient individuals persevere in the face of adversity and life stress leading to transformative positive growth, acceptance, and a sense of greater meaning in life. For example, a clinician who is unable to positively adapt to work stress may successfully adapt to his personal life, or the oncology clinician may be more resilient during the late phase of career, yet not another phase such as in early residency.42,47,49 As a result of interaction with the environment, resilience may change depending on the individual’s response to stress and interactions with others in the environment.42,47,49

**SIDEBAR 2. Three Components of Resilience**

1. Strength of the individual
2. Rise above adversity
3. Positive adaptation
The Interplay Between Burnout and Resilience

Although several protective factors shield the individual against the development of burnout, such as peer support, communication skills training, and self-care, resilience is the key protective factor against burnout, as it shapes and enhances the individual’s efficacy, engagement, and personal accomplishment.6-8 Christine Maslach, a psychologist who has studied burnout extensively believes that burnout involves not simply the interaction between the individual and organization, but also the individual’s attitudes, self-appraisal, and appraisal of others.6-8 As such, burnout can be viewed as a barometer that measures a potentially toxic environment which did not support the clinician to manage his needs and emotions.6-8 Moreover, Maslach and colleagues found that consideration of the individual’s emotions promotes the individual’s sense of control, commitment, and self-efficacy that further protects the individual from burnout.6-8 In addition, several key emotional personality variables associated with resilience significantly minimizes the potential vulnerability to developing burnout, including a sense of coherence, thriving, hardness (commitment, control), optimism, emotional competence, learned resourcefulness, self-efficacy, locus of control, potency, stamina, and personal causation.6-8-45 The individual’s ability to sustain and activate these resources in response to stress leads to a transformative active coping style required to directly address stressors and adversity.6-8 Research on physician resilience supports Maslach’s hypothesis. Zwack and Schweitzer56 conducted an interview study of 200 physicians in Germany to identify health-promotion strategies used by senior physicians to maintain resilience. Three core domains were identified to illustrate strategies and attitudes used to activate resources that lead to active coping and the promotion of resilience, including: job-related fulfillment; behavioral practice (e.g., leisure activities, limit work hours, and professional development activities); and shift in attitudes (e.g., acceptance and attention to positive work endeavors).56 In summary, despite stressful work conditions, physicians were able to activate resources to engage in positive coping strategies needed to foster resilience. As the cancer clinician like Dr. A learns to gain self-awareness and self-regulation of his emotions, which include thoughts and feelings, this enables him to build resources to find solutions to the issues at hand in a complex, ever-changing medical environment. Resilience, in the face of adversity, enables the cancer clinician to be armed with a broad spectrum of skills to develop more solutions to problems and positively adapt to the situation.

Resilience Interventions

Evidence-based, resilience-focused approaches have been promoted as burnout-prevention programs for clinicians tailored to enhance clinicians’ individual skills building and workplace engagement factors.57-59 These approaches, as well as mindfulness-based stress reduction programs, are believed to help foster clinician wellness by preventing and targeting unaddressed burnout directly. Therefore, from an institutional perspective, it is in the best interests of any health care organization to implement and support oncology clinician wellness efforts aimed at promoting clinician resilience as a means to maximize value and improve overall quality of care.

HEALTH PROFESSIONAL RESILIENCE: TACKLING BURNOUT IN ONCOLOGY

Dr. A had promised his son he would attend tonight’s piano recital; however, one of his patients coded in clinic. The use of mindfulness training to build resilience skills would be of benefit for Dr. A. Rather than becoming angry and engaging in self-criticism with statements such as, “How does this always happen to me? I’m the worst father,” reframing critical thoughts and providing self-compassion with gratitude and acceptance would be beneficial to Dr. A in this situation. In response, phrases such as “I will try to end clinic earlier on recital days. I’ll ask Z if he will cover for me. I am a good father and love my son. I’m glad I was here for my patient” are reflective of resilience training.

Although the toll of burnout has been clearly described, it is not as clear what to do to help clinicians become more resilient, engaged with work, and truly thriving in their professional roles. Resilience is not merely restoration to a prior (balanced) state of being. Resilient organisms not only bounce back, they also grow in ways to prevent future trauma and promote growth.59 Resilience does not necessarily lead to greater engagement; it is possible to be resilient and burned out, surviving but not thriving—the walking wounded. Interventions should not merely try to prevent and mitigate burnout; they should also promote positive mood, physical and psychological health, joy, and flourishing in their clinical roles.

Recently, West and colleagues57 reviewed 15 randomized trials and 37 cohort studies to address burnout. On average, interventions reduced overall burnout from 54% to 44%, as measured on the Maslach Burnout Inventory. Although individual (e.g., mindfulness, discussion, and stress management) and organizational (e.g., work environment changes and reduction in work hours) interventions produced similar improvements in burnout in the review by West et al,57 Panagioti et al60 suggested that institutional interventions might be more effective. Both expressed a need for testing of a wider range (and combinations) of interventions with larger sample sizes.

Studies of resilience in the general population have mostly focused on people who experienced extreme trauma that had a beginning, middle, and end, unlike the ongoing vicarious trauma experienced by oncologists and other clinicians dealing with serious illness and death. Yet, there are lessons to be learned. Psychiatrists Southwick and Charney48 interviewed former prisoners of war, Special Forces instructors, and civilians who had experienced severe psychological traumas such as rape, sexual abuse, the loss of a limb, or cancer. They found that in spite of these extreme events, remarkably only a small percentage developed depression or post-traumatic stress disorder. They identified 10 resilience...
factors: realistic optimism, facing fear, moral compass, religion and spirituality, social support, role models, physical fitness, brain fitness, cognitive and emotional flexibility, and a sense of meaning and purpose. Personality was found to be important also. The ability to form warm and caring relationships with others, so-called secure attachment, is associated with greater resilience, as is a perception of personal autonomy and perceiving oneself as competent.64 Conversely, cognitive rigidity, excessive need for certainty, and low emotional intelligence are associated with lower resilience. These traits, to some extent, are determined by early life experience and genetics, but are mutable.

Education and Training Are Important
For example, stress inoculation is a principle of applying graded and increasing levels of stress during training to ensure that the individual progressively adapts to stressors. Clearly, stress inoculation is not the modus operandi in clinical training in which the introduction to human suffering is more intense and uncontrolled.

Better integration of work life and personal life confers greater resilience through helping individuals use the strengths developed in one domain to inform the other. This integration is not merely a balance between work (presumed to be aversive and stressful) and life, that which happens only when outside of work. Integration refers to finding meaning in work, setting appropriate but not rigid boundaries, and finding ways to engage more fully with work when the going gets rough.

Adjusting one’s relationship to work is key. Many wellness programs emphasize healthy activities outside of work—time with family, vacations, exercise, yoga, etc. However, these approaches outside of work may have limited effect on resilience at work unless they are accompanied by a fundamental change in the workplace or one’s relationship to it, especially one’s attitudes and orientation toward the challenges in the workplace.

Mindfulness training is one of the most widely studied approaches. Mindfulness refers to intentional awareness of one’s own thoughts and feelings, nonjudgmentally, with the goal of promoting clarity and compassion (Sidebar 3). By focusing on awareness and not relaxation, mindfulness training can help individuals be more aware of burnout in its early phases—noting changes in the body (e.g., headaches and muscle tension), emotions (irritability and sarcasm), or thoughts (blaming self or others)—before it becomes unmanageable, name it, and accept that it is present.62 Being more mindful of one’s own inner experience can build skills to mitigate burnout and enhance resilience, such as perspective-taking and cognitive reappraisal.49,59 Mindfulness also addresses some of the biologic underpinnings of resilience. For example, mindfulness programs for military recruits promoted self-awareness and enhanced “healthy” gene expression, providing one plausible pathway toward enhanced resilience.63

Mindfulness approaches emphasize “turning toward” difficult and potentially aversive challenges, identifying the earliest signs of stress, adopting an attitude of curiosity and beginner’s mind, the capacity to see a familiar situation with new eyes. Turning toward distressing situations is possible only if one can lower one’s level of reactivity and wait momentarily before reacting, mitigating stress before it becomes overwhelming. Various contemplative practices, including formal meditation and “mindful moments” during the workday, can help individuals recognize stressors more readily, respond to them sooner, and develop positive attitudes rather than fearful avoidance (Sidebar 4). Our study of 70 primary care physicians included mindfulness meditation, structured narrative exercises and appreciative inquiry (a strength-based interview approach), and discussion of key topics such as errors, grief and loss, meaningful moments, self-care, witnessing suffering, and communication with patients. After the program, physicians were not only less burned out and experienced less psychological distress, but they also reported greater empathy and better relationships with their patients.62,64 Their personalities changed to be more attentive and resilient, and the effects endured. Key elements of the program, according to participants, were a greater sense of community, having acquired self-awareness skills, and giving themselves permission to care for themselves in the interest of being more available to their patients. Subsequent studies suggest that patient ratings of their physicians also improved.65

The Work Environment
Healthy clinical teams promote resilience; supportive social environments lead to greater resilience. A supportive

**Sidebar 3. Three Components of Mindfulness**
1. Intention: intentional awareness of thoughts
2. Attention: ability to pay attention in the present, nonjudgmentally
3. Attitude: goal to promote acceptance and self-compassion

**Sidebar 4. Take a Mindful Moment During Your Workday**
Oncology clinicians routinely wash their hands between patients multiple times a day. Now is the time for a mindful moment: simply focus, pay attention to the sound of the water: its temperature, weight, and the way it feels on your hands. Look at the water, how it falls. Your thoughts may wander—do not worry, acknowledge them, and return your attention back to the water. Notice the smell of the hand soap, its texture, and weight on your skin. Your thoughts may wander—do not worry, return your focus to the water.
social environment is associated with increases in neurotransmitters and hormones associated with well-being (and their corresponding receptors), presumably because of social epigenetic processes. For example, supportive environments lead to increased production of dopaminergic receptors in key areas of the brain, receptors that are involved in the brain’s reward circuits. Conversely, the toxic combination of high responsibility, low sense of control, and isolation sets the stage for a sense of exhaustion, powerlessness, and helplessness.66 Putting clinicians in morally compromising situations, excessive cognitive load because of interruptions and dysfunctional electronic health record systems, the increase in meaningless documentation and regulatory requirements, and placing increasing pressure on clinicians to see more patients without regard to quality are environmental influences that must be addressed by health care teams and health care institutions.67,68 Merely reducing work hours will likely not be effective in promoting resilience without enhancing the work environment.

Sinsky et al68 suggest a set of changes to enhance the work environment that may hold promise in reducing burnout and enhancing clinician resilience and well-being. Their suggestions revolve around shared care and teamwork and are based on observations of primary care physicians who report greater joy in practice. However, many of these changes could be adopted in oncology outpatient settings. These are listed in Sidebar 5. Although not directed at resilience per se, these enhance the quality of clinicians’ workday and merit further investigation. Just as individuals can be mindful of their level of burnout and well-being, health care organizations can monitor these as quality indicators and disseminate findings to raise collective awareness and resolve.69 In this case, leadership is key; individual practitioners are more likely to thrive in those organizations in which the leadership has a demonstrated commitment to clinician well-being. Case reports of health care organizations that have implemented organizational approaches to clinician resilience emphasize principles that are summarized in Sidebar 6.70 Although there are few controlled trials and institutions tend to report their own positive outcomes (improvements in burnout, distress, and the clinical environment), these suggestions are sensible and pragmatic; we cannot afford to delay until results of larger randomized trials are available.

THE JOY INITIATIVE: A STUDY OF POSITIVE PSYCHIATRY AND MINDFULNESS TRAINING ON LEVELS OF LIFE SATISFACTION AND WELLNESS

Among medical students, mindfulness meditation has been demonstrated to decrease symptoms of anxiety.71 Mindfulness-based stress reduction interventions also decrease tension/anxiety, depression, severity of stress, and mood disturbance scores on the Profile of Mood States and confusion/bewilderment in this population. Similarly, these studies have also revealed increases in vigor/activity, trainees feeling more effective in managing stressful situations, and increased empathy.72,73 Cognitive behavioral therapy and positive psychology exercises have also proven effective.
in decreasing depressive symptoms and improving positive attitude and happiness/outlook on life for clinically ill individuals and the general population, but there have been no studies to date demonstrating efficacy in the medical student population. A systematic review of stress management programs designed for medical students did identify three mindfulness-based interventions for medical trainees that demonstrated positive outcomes; however, to date, no interventions focusing on emotional resilience training skills using cognitive behavioral therapy combined with mindfulness training have been identified. The investigators at Michigan State University developed an easily pilot-deployable programmatic intervention to help students and residents discuss and address their own burnout issues to enhance trainee well-being and emotional health with a focus on developing strengths to face the emotional challenges of medical training.

Programmatic Intervention Design
Michigan State University Department of Psychiatry resident physicians created and taught 60-minute weekly classes for 10 weeks for students at the Michigan State University College of Osteopathic Medicine. Half of each session was devoted to mindfulness therapy and the other half to cognitive behavioral therapy exercises. The cognitive behavioral therapy exercises were created and written by our lead resident physician (M. Rose), primarily based on the philosophy and writings of Victor Frankl. Individual weekly topics included selecting and practicing joyful activities, identifying one’s core strengths and virtues, creating a vision, naming goals, daily compassion, and practice of gratitude. Each session had weekly mindfulness exercises and homework. The mindfulness topics included breathing, body awareness, eating, walking, and sound. Each class session concluded with brief homework assignments that reinforced the week’s theme.

Seven female and seven male students elected to participate in the intervention. A control group was approved near the end of the intervention consisting of 79 medical students who did not participate in the intervention. The Beck Anxiety Inventory, Fordyce Happiness Scale, and the Authentic Happiness Inventory were administered to both groups to assess the impact of the intervention. The Beck Anxiety Inventory is a 21-item self-report measure of anxiety. Higher scores reveal greater levels of anxiety. The Fordyce scale is a self-report happiness scale consisting of two parts. Section one measures the overall perception of mood (rating of 0–10), and the second part measures the percentage of time a subject estimates feeling happy, unhappy, or neutral. The Authentic Happiness Inventory is a 25-question survey assessing aspects of well-being including self-esteem, life purpose, and emotional supports. For the intervention group, these surveys were administered at the outset, midpoint, and termination of the 10-week intervention. For the control group, the surveys were administered at the termination (10-week intervention point) of the study. All data were analyzed using SPSS (IBM) and MYSTAT (SYSTAT; San Jose, CA).

RESULTS
Fourteen students participated in the Joy Initiative project (Fig. 1). None of the intervention participants withdrew from this study. Figure 1 depicts study participants results. The analyses revealed the mean Beck Anxiety Inventory scores of participating (intervention) students declined from 13.8 at the first session (standard deviation [SD] 8.1) to 6.8 (SD 6.8) after the last session. This decrease in scores was statistically significant (p = .007; 95% CI, −8.089, −1.711; degrees of freedom [df] 9; SD 4.4). There were no statistically significant differences between the means of male or female (intervention group) participants. The mean Beck Anxiety Inventory score for the 79 students in the control group was higher of 9.6 (SD 7.5), compared with the intervention group mean of 6.8 (SD 6.8). However, this difference between groups was not statistically significant (p = .326; 95% CI, −4.423, 11.756; df 8; SD 10.5). The mean Authentic Happiness Inventory Scores of participating (intervention) students improved, increasing from 79.2 (SD 9.6) to 87.3 (SD 13.9). The increase in Authentic Happiness Inventory scores between the beginning and endpoint of this intervention was a statistically significant change (p = .046; 95% CI, 0.186, 16.214; df 9; SD 11.2). There was a statistically significant difference between the female and male changes in scores, with female mean score difference 13.3 points higher than that of male mean scores (p = .007; 95% CI, 5.061, 21.605; df 7; SD [female] 4.676; SD [male] 5.586). At the conclusion of the 10-week intervention, the mean Authentic Happiness Scale Score of the Intervention Group was 87 (SD 13.9) compared with the Control Group 75 (SD 12.3; analysis of variance 8.8; df 1; p = .004). For the Fordyce Happiness Scale, Part One: for the intervention participants, the mean Fordyce Part One scores increased from 7.6 (SD 1.0) to 7.8 (SD 0.4). This difference was not statistically significant (p = .182; 95% CI, −0.419, 1.419; df 3; SD 0.6). There were no statistically significant differences between the means of male or female (intervention group) participants. The control group had a lower Fordyce Part One happiness score of 6.6 (SD 2.0) compared with that of the intervention group of 7.8 (SD 0.4). However, this difference between groups was not statistically significant (p = .178; 95% CI, −0.280, 1.080; df 4; SD 0.5). For Fordyce Part Two, the mean Fordyce Part Two scores improved for the intervention participants, increasing from 56.2 (SD 18.0) to 69.8 (SD 18.7). The difference between the two data sets was not statistically significant (p = .090; 95% CI, −2.058, 23.658; df 9; SD 18.0). There were no statistically significant differences between the means of male or female (intervention group) participants. The intervention group had a higher Fordyce Part Two happiness score of 69.8 (SD 18.7) compared with the control group of 54.5 (SD 23.9). However, this difference between groups was not statistically significant (p = .102; 95% CI, −37.699, 4.099; df 9; SD 29.2).

The availability of classroom space limited our intervention timing with respect to the academic schedule. The first measures were taken from the intervention group as soon as students returned from a 2-week winter break, at a time they might be expected to naturally feel most relaxed and...
happy. In addition, the students provided reports via qualitative feedback that they very much enjoyed the class and looked forward to each week’s session. None of the students provided negative feedback regarding the intervention. Students reported improved life satisfaction and increased ability to cope with stressors. One student recommended additional videos and interactive sessions, but reported overall satisfaction from participation. None of the participants withdrew from the study. The homework and techniques provided to students were intentionally brief, high-yield exercises, allowing them to practice these techniques while going to class and studying. Indeed, students also reported using the techniques demonstrated each week.

Institutional Response With a Long-term Impact
After the Joy Initiative pilot intervention study, the medical school administration provided support and funding for continuation of the project. Since these monthly “Joy Initiative Focus Group” meetings began, changes have been made on an administrative level. As a direct result of communication during these meetings, a new medical college staff position was created, a Program Officer for Outreach and Inclusion, with duties including coordination and provision of administrative support to continue the Joy Initiative monthly meetings. Student representatives from the medical school diversity committee spearheaded a lead role in the organization of the Joy Initiative events, and a minority student event related to the Joy Initiative was incorporated into student orientation activities for incoming medical students. The Joy Initiative Focus Group meetings continue on a monthly basis, with average attendance ranging from 50 to 70 students across 3 campus sites. In addition, the interventions used in this pilot study are now incorporated into formal elective classes offered at both the osteopathic and allopathic medical schools at Michigan State University, (“Happiness and Emotional Resilience Training for Health Care Providers Elective,” Course PSC 591 301, Michigan State University College of Osteopathic Medicine; and “Resilience and Happiness Promotion for Health Care Providers,” HM 590 Section 304, Michigan State University

FIGURE 1. Joy Initiative Participant Outcomes for Anxiety and Happiness

Outset, midpoint, and termination of the 10-week intervention compared with control group.
CONCLUSION

Oncology clinicians are at increased risk for burnout; however, building resilience in the face of adversity to positively adapt to the changing health care system is key.

Although the optimal program to address burnout requires additional research, organizations must not delay to act. Organizations must set a precedent and address oncology clinician burnout through the direct implementation of successful, feasible, effective resilience interventions such as the Joy Initiative.

References


Kraft U. Burned out: your job is extremely fulfilling. It is also extremely demanding—and you feel overwhelmed. You are not alone. *Sci Am Mind*. 2006;29-33.


