ORIGINAL RESEARCH

A Curriculum to Increase Empathy and Reduce Burnout

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ABSTRACT

Purpose: Empathy is essential for good patient care. It underpins effective communication and high-quality, relationship-centered care. Empathy skills have been shown to decline with medical training, concordant with increasing physician distress and burnout.

Methods: We piloted a 6-month curriculum for interns (N = 27) during the 2015-2016 academic year at the University of Wisconsin-Madison. The course included: (1) review of literature on physician well-being and clinical empathy, (2) instruction on the neurobiology of empathy and compassion, (3) explanation of stress physiology and techniques for mitigating its effects, (4) humanities-informed techniques, and (5) introductions to growth mindset and mindful awareness. To measure effectiveness, we compared empathy and burnout scores before and after the course.

Results: The course was well-attended. Intern levels of burnout and empathy remained stable over the study period. In multivariable modeling, we found that for each session an intern attended, their emotional exhaustion declined by 3.65 points ($P = 0.007$), personal accomplishment increased by 2.69 points ($P = 0.001$), and empathic concern improved by 0.82 points ($P = 0.066$). The course was well-liked. Learners reported applying course content inside and outside of work and expressed variable preferences for content and teaching methods.

Conclusion: Skills in empathic and self care can be taught together to reduce the decline of empathy and well-being that has been seen during internship. In this single-center pilot, resident physicians reported using these skills both inside and outside of work. Our curriculum has the potential to be adopted by other residency programs.

INTRODUCTION

Strong patient-physician relationships are essential for effective communication and support high-quality care. Clinical empathy is a critical skill in the cultivation of effective therapeutic rela-

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tionships with patients. Empathy includes cognitive and emotional components, as well as intentions and behaviors that seek to alleviate suffering (ie, compassion and compassionate behaviors). There is no consensus definition of clinical empathy, but researchers have studied the impact of physician empathy primarily by assessing communication or relationship variables. These studies demonstrate positive outcomes for both physicians and their patients. For physicians, these outcomes include improved diagnostic accuracy, efficiency, self-efficacy and confidence, job satisfaction, burnout, rate of malpractice claims, and the cost of care.[1-5] Patient outcomes include improved recall, comprehension, loyalty, trust, satisfaction with care, self-efficacy, treatment adherence in chronic disease management, health status, quality of life, safety, symptom management and function.[6-12] In fact, a meta-analysis published in 2014 focused on randomized controlled trials in which the patient-physician relationship was the experimental variable, found a meaningful impact on health care outcomes across multiple disease states.[12]

There is a nuanced relationship between empathy and burnout. High personal distress and identification with a suffering patient can engender stressful or overwhelming suffering within the empathizer, raising the risk for burnout.[13,14] However, research with trauma therapists demonstrates that well-developed empathy helps both patients and clinicians. This work suggests that "exquisite empathy," described as "highly present, sensitively attuned, well-boundaried, heartfelt empathic engagement" is, in fact, sustaining

and protective against burnout and compassion fatigue.[15,16] Further, a study examining an intervention aimed at reducing personal distress via cognitive reappraisal compared with an intervention to augment compassion found that while both interventions improved subjects' altruistic behaviors, it was the compassion intervention that was more protective against personal distress.[17] These studies support the growing consensus that well-developed empathy protects physicians against burnout.[18] Since progress through medical training consistently has been shown to correlate with reductions in empathy and epidemic levels of distress and burnout, interventions to support empathy skills and personal well-being are a critical necessity in residency programs.[19,20]

METHODS

We developed a 9-session curriculum for internal medicine interns to strengthen empathy skills and reduce burnout. We hypothesized that a multimodal, neuroscience and humanities-informed curriculum would improve measures of empathy and burnout in this population and measured the course's impact by examining burnout and empathy before and after course participation.

Curriculum Development

We performed a literature review to identify pedagogical techniques with relevance to the development of (1) skills in self-care to reduce burnout and emotional distress and (2) skills in effectively caring for others focused on empathic or compassionate care. We reviewed the medical and other health professions literature as well as the education, psychology, and neuroscience literature. Given evidence from prior programs that a one-size-fits-all approach will leave learner subgroups untouched, we decided to employ a multimodal approach.[21] Components ultimately included in the curriculum are shown in Table 1. We also taught the concept of growth mindset at the beginning of the course to increase learner acceptance and uptake of content and bolster their confidence in learning these skills. Growth mindset is a belief that with effort, one can improve in a certain domain (eg, empathy).[22]

Course Logistics

The course included 9 sessions ranging in length from 2 to 4 hours held on Friday afternoons spread over 6 months. We worked with residency program leadership (including program staff, chief residents, and the program director) to determine where in the weekly and daily schedule our curricular sessions would face the least competition and clinical coverage difficulties that could lead to resentment or low attendance. In this pilot year, the intern class was divided into 2 groups so only half of the interns would

Table 1. Curricular Components

Empathy and Compassion	Observation Training Using Art	Behavior Training Using Improvisation	Stress, Resilience, and Self-Awareness
Definitions	Metacognition	Mirroring	Mindful awareness
Relationship between empathy and distress	Emotion recognition	Emotion recognition and response	Meditation
Neurobiology of empathy and compassion	Connecting with one's own humanity	Close listening	Positive emotion cultivation
Evidence base for utility in Medicine	Comfort with ambiguity	Attention	
Compassion meditation Empathic communication	Perspective-taking	Flexibility	

Box. Outcome Measures and Their Domains

Instruments and Domains Measured

Burnout (Maslach Burnout Inventory)
- Emotional exhaustion – Feelings of depletion and exhaustion related to work
- Depersonalization – Feelings of callousness and detachment from patients
- Personal accomplishment – Feelings of effectiveness and meaning in work

Empathy Domains in the Interpersonal Reactivity Index
- Perspective taking – The ability to perceive another's situation within the world (cognitive empathy)
- Empathic concern – Feelings of warmth, compassion, and concern for others
- Personal distress – Feelings of distress when observing another's pain (physical or emotional)
- Fantasy – The tendency to imaginatively project oneself into the emotional life of another, measured by identification with fictitious characters in books or movies

Emotional Styles Domains
- Resilience – Speed of recovery from adversity
- Outlook – Ability to maintain positive emotion
- Social intuition – Adeptness at picking up social cues
- Self-awareness – How well one perceives bodily feelings reflecting emotion
- Sensitivity to context – Self-regulation in light of social context
- Attention – How sharp and clear focus is

be gone from rotations at any given time. We randomized men and women separately into the groups to preserve gender balance. The schedule was provided to the interns at the beginning of the year, and we sent email reminders to all clinical teams at the beginning of each rotation with the schedule of sessions. We also sent reminder pages to the interns 1 to 2 hours before sessions. This project was reviewed and exempted by the University of Wisconsin Institutional Review Board as Program Evaluation.

Course and Program Evaluation

All interns (N = 28; 22 men, 6 women) were required to participate in the curriculum, but they could elect whether or not to participate in the curriculum evaluation, which all but 1 intern elected to do (N = 27). We gathered data during their orientation period, after 6 months of internship, and in the last month of internship. To protect interns' privacy, the course creators did not have access to personally identifying information on any of the measures collected; their data were tracked using a nonidentifying study ID. Outcome measures included empathy, using the Interpersonal

Table 2. Changes in Burnout and Empathy Measures Before and After Attendance of the Empathy Course

	Pre-Course[a]	Post-Course[a]	β Coefficient for Attendance[b]	Other Significant Predictors[c]
Burnout				
Emotional exhaustion	22.5 (5.6)	23.0 (8.0)	-3.65 ($P = 0.007$)	Sensitivity to context β = 3.97 ($P = 0.02$)
Depersonalization[d]	8.7 (4.4)	10.6 (4.5)	0.75 ($P = 0.40$)	None
Personal accomplishment	39.4 (4.2)	39.6 (4.5)	2.69 ($P = 0.001$)	Attention β = 0.96 ($P = 0.017$)
Empathy				
Perspective-taking	19.9 (4.7)	20.6 (4.4)	-0.06 ($P = 0.869$)	Outlook β = 0.78 ($P = 0.023$)
Fantasy	18.6 (5.3)	17.7 (6.6)	0.79 ($P = 0.21$)	None
Empathic concern	21.2 (2.9)	21.6 (3.0)	0.82 ($P = 0.066$)	Sensitivity to context β = -1.1 ($P = 0.05$)
Personal distress	10.3 (4.2)	9.6 (4.4)	0.56 ($P = 0.29$)	None

[a] Expressed as Mean (Standard Error).
[b] Impact of attendance expressed as β coefficient; for instance, for every session attended the outcome changes by β.
[c] Other significant predictors include those with $P < 0.05$ in multivariable modeling.
[d] $P < 0.05$.

Reactivity Index (IRI), and burnout, using Maslach Burnout Inventory (MBI). Predictors included Mindset Assessment Profile (MAP)[23–25] and an emotional styles inventory (ESI) that was collected during orientation and at the end of internship to understand the relationship among baseline emotional style, burnout, and empathy.[26] The emotional styles inventory measures resilience, outlook, self-awareness, social intuition, sensitivity to context, and attention. Domains included in the outcome measures are summarized in the Box. If our curriculum were effective, we would expect to see stabilization or reductions in the MBI domains of depersonalization and emotional exhaustion and a stabilization or increase in personal accomplishment, as well as the IRI domains of empathic concern and perspective-taking. We tracked attendance at each session. At the end of the course, we also evaluated favored course methods, skills used both inside and outside of work, and ongoing support for the course using free text entry.

Statistical Analysis

All pre- and post-data were analyzed using paired t tests for dependent samples. In order to understand how the course affected burnout and empathy, we performed multivariable modeling including the following predictors: mindset, emotional styles domains, cohort (to capture time of year), and session attendance. Given the correlations between predictors and instruments, collinearity was assessed among the predictor variables and was acceptably low to include all covariates in the model. Although we performed several comparisons between our burnout and empathy outcome variables and our predictors of interest, we did not adjust for multiplicity due to the exploratory nature of those analyses. All analyses were conducted using SAS, version 9.4 and findings were statistically significant at $P < 0.05$ (95% CI).

RESULTS

Of 28 interns, all participated in the course and 27 (96.4%) elected to participate in the course evaluation. The reason for the one intern's nonparticipation was unknown. At baseline, the 2 cohorts did not differ significantly with respect to growth mindset, empathy levels, burnout, or emotional style, and burnout was present in 41% of interns (scoring high in emotional exhaustion or depersonalization, or both) with average scores in the moderate range for both. Detailed pre- to post-outcome measures, as well as the impact of session attendance on outcome measures, are shown in Table 2.

Intervention Feasibility and Acceptability

Interns attended a median of 7 of 9 sessions in both cohorts. However, there were more interns who attended fewer than 6 sessions in cohort 2 (attendance range 5-8 in cohort 1 and 3-8 in cohort 2). Most interns (74.0%) felt they had the support of other residents and faculty to attend the class. The other 26% reported feeling moderately supported and, of these, most reported that it was difficult to leave on call days or otherwise particularly busy clinical days. At course completion, interns were asked to rate their anticipated level of support for new interns attending the course the following year. The majority (92.5%) reported a high, unconditional level of support for the course in the future. By contrast, 2 respondents reported contingent support. For example, one intern said they would "do (their) best to get (their interns) to the course though patient care will continue to take precedence."

Use of Concepts and Favored Methods

Interns reported utilizing concepts both in and outside of work. Skills learned in the improvisational theatre sessions, meditation or mindfulness practices, and specific empathic communication techniques were mentioned the most. Approximately 33% of interns specifically commented that naming emotions and the other skills taught as part of the empathic communication mneumonic NURSE (Naming, Understanding, Respecting, Supporting, Exploring)[27] were very helpful, both in their personal and professional lives. One stated that it was "extremely helpful in 'defusing' angry/frustrated patients."

Many interns made comments that meditation and reflection were very helpful, especially with managing their personal emotions: "When I am about to see a presumably 'difficult' patient in clinic, I definitely pause outside the room, take a deep breath, and then knock."

A few interns (14.8%) noted that they started using meditation

and mindfulness more regularly. The fixed versus growth mindset was a new concept to many interns and, at the end of the year, 29.6% noted it as a concept that they either recalled or used during the year. One intern in particular recalled the growth mindset stating, "It took me a really long time to realize that I wasn't alone in feeling kind of overwhelmed and underqualified. I think once I felt okay about not being 100% perfect at my job (and focus on growing, helping patients) I really got a ton better at my job!"
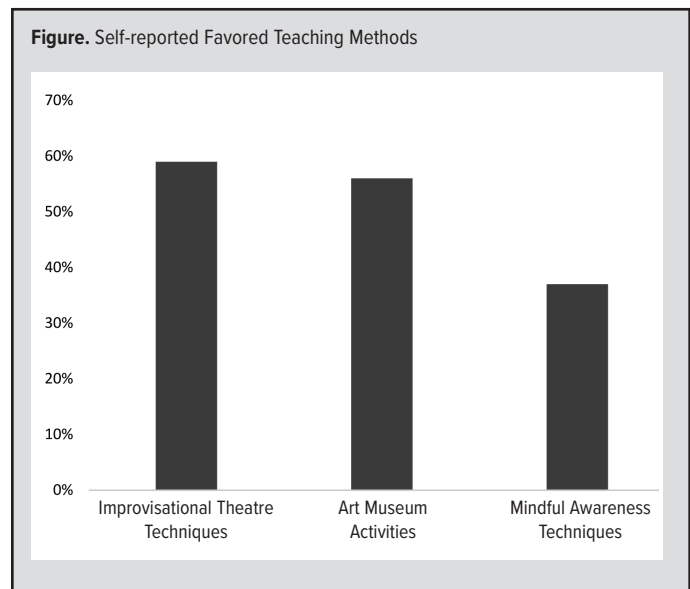
Favored methods in the course also varied, but visiting the art museum and the improvisational theatre sessions were the most enjoyed. Many interns said they appreciated the opportunity to get away from the hospital to visit the art museum. The percentages of interns that reported each method as most enjoyable are shown in the Figure; many interns rated equal enjoyment of more than one method.

Empathy and Burnout

The pre- and post-course scores in all burnout and empathy subscales are shown in Table 2. The only measure that changed significantly was depersonalization, which appeared to increase. This could imply a decrease in empathy. However, in the model that included course attendance, there was no signficiant relationship between course attendance and depersonalization (P for beta = 0.40). Course attendance significantly predicted reduced emotional exhaustion (P = 0.007) and improved personal accomplishment (P = 0.001). These findings suggest that without the course, burnout would have worsened over the course of the year, as expected historically. We compared our pilot interns' empathy levels during the fall of their second year of residency to a group of historical second-year residents in our program who had not participated in the course, but were otherwise comparable due to their training level. The 27 residents who had taken our course vs the 34 historical residents showed improved IRI subscale scores in personal distress: 9.26 vs 11.67 (P = .03). All other domains did not reach significance, including perspective-taking: 21.26 vs 19.74 (P = 0.18); empathic concern: 21.33 vs 19.94 (P = 0.12); fantasy: 18.15 vs 16.41 (P = 0.23). Improved empathy is shown on the IRI by increases in perspective-taking and empathic concern accompanied by decreases in personal distress.

DISCUSSION AND CONCLUSIONS

We developed a feasible and well-liked intervention to improve skills in the care of others and self, as measured by improvements in empathy and burnout concordant with course attendance. We found that including multiple modalities supported content delivery. While depersonalization scores, on average, worsened over the course of the year, we found that attendance in our course did not appear to predict this change and was associated with improvements in emotional exhaustion and personal accomplishment, as well as a trend toward improvement in empathic concern. In addition, the course's effect on empathy was sustained after the course

Figure. Self-reported Favored Teaching Methods

ended—as assessed 3 to 9 months after course completion—in comparison to a historical comparison group.

We found that different learners preferred different learning methods. This finding is consistent with the "CHANGES" study,[21] which showed that learner characteristics interact with curricular content in ways that are critical for educators to consider. A "one-size-fits-all" curriculum with a single modality is unlikely to be as effective for all learners as a curriculum that includes different "hooks" and methods. We challenged ourselves to integrate a variety of methods and content into our curriculum, in order to increase the likelihood that any curricular arrow would find a target and stick, allowing us to engage all learners. The methods and concepts interns reported as useful, in both work life and outside of work, clustered around emotional intelligence, empathic communication, and mindfulness in the face of stress or adversity.

We initially were surprised to find worsening depersonalization pre- to post-course, with no apparent effect of course attendance in multivariable modeling, as well as the apparently stable emotional exhaustion pre- to post-course, with an apparently protective effect from course attendance. We did not observe the historically expected increase in burnout over the course of internship in this group of interns.[20] To better understand whether this was simply related to the overall educational environment at our institution, we were able to compare changes in burnout from orientation to mid-academic year for the intern class entering the year after our pilot year to institutional comparisons (other nonprocedural training programs, including pediatrics, emergency medicine, psychiatry, pathology, neurology, radiology, nuclear medicine, and radiation oncology). In this group, we saw that between orientation and mid-year, the internal medicine interns—all of whom received our course—had depersonalization change by -0.11 and emotional exhaustion change by -0.91 (P = 0.92 and P = 0.7, respectively), while in the other nonprocedural interns depersonalization changed

by 1.6 and emotional exhaustion changed by 6.68 ($P = 0.22$ and $P = 0.005$, respectively).

Strengths of this study include excellent course participation, which heightens our confidence in the course's feasibility and acceptability. We also used common and validated outcome measures. Study limitations include the limited power that comes from a small sample size and multiple comparisons made as part of the analysis of this evaluation. The fact that the intervention occurred at a single center by a single teaching team may limit the generalizability of our findings. Finally, we chose for inclusion as predictor variables the subscales of the Emotional Styles Inventory, as published by Richard Davidson, PhD.[26] This inventory was selected because we have found it helpful when coaching residents on doctor-patient relationship issues to identify contributors and potential solutions. While it is not a validated instrument, it contains domains we have found pertinent as educators, and our analysis confirms that it maps to important outcomes. An additional limitation is the potential for reverse causation. For example, perhaps less emotionally exhausted interns were more likely to be able to leave their services to come to the sessions.

Limitations above notwithstanding, our findings suggest that skills in self and others are not mutually exclusive and that, for physicians, these domains can be linked and fruitfully taught together. Future directions include further development of this course to achieve graduated levels of difficulty so that trainees can retrieve and utilize the concepts learned during the most difficult clinical encounters and practice scenarios, in addition to determining whether other learner groups would benefit similarly from this curriculum to assess reproducibility and generalizability.

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