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ORIGINAL RESEARCH

A Comprehensive Residency Wellness Curriculum

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Abstract

Introduction: Resident physician burnout is an epidemic in medical education. There are several wellness curricula published, but few describe a comprehensive program to address wellness. Our objectives were to develop and pilot a longitudinal resident wellness curriculum and assess for feasibility and sustainability.

Methods: We surveyed emergency medicine (EM) residents from two residency programs in the United States to assess a baseline level of burnout using the Maslach Burnout Inventory. We developed a comprehensive and longitudinal wellness curriculum for EM residents that incorporated all domains identified by the American College of Emergency Physicians Wellness Wheel. Mindfulness practice was incorporated throughout the curriculum.

Results: A convenience sample of 106 EM residents were sent the baseline survey. A response rate of 69% was achieved, the median age of the respondents was 29 years, and 44.5% were female. Overall, 67.5% (95% CI: 50.5; 80.8%) reported burnout in at least one of the three domains of the Maslach Burnout inventory. 34.8% reported burnout in the personal accomplishment domain, 40.8% reported depersonalization, and 44.3% reported emotional exhaustion. The wellness curriculum was successfully implemented at the Georgia-based residency program. The curriculum has proven to be sustainable since it began in 2016. Quantitative statistical testing for the post-intervention survey was not possible due to a low response rate. However, subjective receptivity was high, with participants describing these sessions as high-yield, informative and practical.

Conclusions: Burnout is highly prevalent among EM residents. We provide a curriculum developed for an EM residency program that is multifaceted and comprehensive, including basic wellness topics, mindfulness, financial and medicolegal issues, as well as topics that address the stresses specific to clinical emergency medicine. The curriculum has been in place in its current form since 2016 and has proven to be sustainable.

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INTRODUCTION

Resident physician burnout is an epidemic in medical education [1]. Studies estimate that burnout ranges from 40 to 75% among residents across specialties [2–9]. Increased burnout has been correlated with medical errors, lower patient satisfaction, and worse patient outcomes [10–13]. In response, the Accreditation Council for Graduate Medical Education has identified physician well-being as a priority [14]. A common approach to improving resident wellness is the development of curricula to teach methods to improve resilience and healthy living.

Currently, there are few published comprehensive longitudinal wellness curricula for residents. Many prior curricula have included sessions on developing self-awareness, setting life goals, positive psychology, mindfulness, time management, and balancing personal and professional life [15–17]. Other topics in prior curricula include: identifying stressful clinical scenarios, self-reflection, finding gratitude, enhancing personal resilience, professionalism, financial management and wellness, emotional wellness, team building, and physical wellness [18,19]. Others have proposed an exercise and dietary improvement program and a financial management curriculum for surgical residents [20,21]. In 2017, the Resident Wellness Consensus Summit published the outline of a proposed

comprehensive wellness curriculum for emergency medicine residency programs [22,23]. Another group implemented a corporate-based wellness curriculum in their emergency medicine residency program, which received negative feedback from participants [24]. Finally, several medical schools have published curricula for teaching wellness skills to medical students [20,25–27]. Most of the published residency curricula are not comprehensive, except for the proposal by the Resident Wellness Consensus Summit. However, it is unknown if that curriculum has been successfully implemented by a residency program.

A comprehensive residency wellness curriculum that has been sustainably implemented would be of great value to the graduate medical education community. Therefore, we present our longitudinal wellness curriculum for emergency medicine (EM) residents, with the results of our pre-intervention wellness assessment survey.

METHODS

Assessing Prevalence of Burnout Among Resident Physicians

To determine the prevalence of burnout among EM residents, we surveyed residents at two programs in the Southeastern United States, one in Georgia and one

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in Florida, in the summer of 2016. Both programs are 3-year EM residencies with primary clinical sites at large, urban hospitals that serve as regional trauma centers. The curriculum was implemented in the Georgia program, following the administration of this survey. The Institutional Review Boards of both participating universities reviewed and approved the study design for this survey.

The optional and anonymous electronic survey assessed basic demographic information, marital status, number of children, and nutrition and exercise habits. To assess for burnout, we administered the Maslach Burnout Inventory (MBI), which includes three burnout domains: personal accomplishment, depersonalization, and emotional exhaustion [28,29]. The MBI-HSS (Human Services Survey) is the most widely-used MBI with a normative dataset from a cohort of 11,000 healthcare workers. Burnout was defined as a positive result in at least one of the domains.

Data are summarized as descriptive statistics. Numerical values are reported as medians with interquartile ranges. Categorical variables are presented as percentages results.

Curricular Development

Given the many potential contributors to burnout, residency programs' responses to burnout must also be multi-factorial. Our institution [Georgia] provides an introductory wellness curriculum with interdepartmental collaboration from EM, Internal Medicine, Obstetrics/Gynecology, and the Faculty Staff Assistance Program. The curriculum is designed for PGY1 residents, and consists of multiple one-hour workshops, with topics such as change management, stress management, time management, sleep hygiene, and conflict management. These sessions utilize a PowerPoint presentation that is delivered by faculty from the involved departments.

The above curriculum covers basic topics that are fundamental to physician wellness, but we identified a need for more advanced topics. Therefore, we developed a 36-month longitudinal curriculum for EM residents. The curriculum begins during the intern orientation and continues through the end of the residents' training. Interns discuss foundational wellness topics as detailed above, while senior residents are exposed to topics that include coping strategies, emotional regulation, second victim syndrome, recovering from mistakes, advocacy, and financial planning (Table 1). Topics are covered progressively, with more advanced topics building on foundational ones from the basic curriculum.

Table 1: Wellness Curriculum Topics by Year

PGY-1	PGY-2	PGY-3
Managing change and transition	Demands of professionalism	Working with difficult patients
Promoting Quality Sleep	Burnout and resilience	Interviews and job hunt
Time management	Conflict resolution	Academic careers
Stress management techniques	Self-care (nutrition, exercise)	Financial planning for graduates
Work-life integration	Mindfulness	Tips from Attendings
Conflict management	Positive coping strategies	Leadership/National Engagement
Palliative care	Reflection	Depositions/Medical Malpractice
Loan repayment & Financial advice	Debriefings and Second Victim Syndrome	

The objectives for each session can be found in **Appendix A**. The curriculum was modeled after the American College of Emergency Physicians' (ACEP) Wellness Wheel [30]. It covers seven wellness domains: emotional, occupational, financial, physical, intellectual, social, and spiritual wellness. Mindfulness is incorporated throughout the curriculum and mindfulness skills are reinforced periodically. Mindfulness exercises include a seated meditation, walking meditation, deep breathing exercises and reflection through both journaling and storytelling.

Residents are divided into their respective classes for one session per month to facilitate the delivery of a class-specific curriculum. All sessions are designed for a small group of approximately 15 learners, which fosters more open discussion among the group. The sessions can be conducted in about 50 minutes and include a didactic component to guide the conversation. Discussions should be focused around the session goals and objectives. However, discussions are also meant to be organic. Therefore, the session leader may allow the discussion to flow off topic if necessary.

RESULTS

Survey Results

A convenience sample of 106 EM residents from the programs were invited via email to participate, and 73 (69%) responded. The median age of respondents was 29 years, and 44.5% were female. The distribution of respondents among the three residency years was roughly equal. Within the domains, 34.8% reported burnout in personal accomplishment, 40.8% reported depersonalization, and 44.3% reported emotional exhaustion. Overall, 67.5% reported burnout in at least one of the domains. Table 2 provides survey results organized by institution.

Table 2: Results of Resident Baseline Wellness Survey

Characteristic	Georgia (N = 55)	Florida (N = 18)
Age*	29 (27 – 34)	28 (24 – 36)
Female	25 (45.5%)	7 (38.9%)
Number of Children*	0 (0 – 1)	0 (0 – 2)
Daily hours of sleep*	6 (5 – 7)	6 (4 – 7)
Days per week with physical exercise*	3 (2 – 5)	3 (1 – 6)
Days per week that work impacts nutrition choices*	1 (0 – 1)	1 (0 – 1)
Position		
PGY-1	21 (38.2%)	5 (27.8%)
PGY-2	18 (32.7%)	8 (44.4%)
PGY-3	16 (29.1%)	5 (27.8%)
Marital Status		
Couple	14 (25.5%)	4 (22.2%)
Divorced	9 (16.4%)	4 (22.2%)
Married	18 (32.7%)	6 (33.3)
Never Married	14 (25.5%)	4 (22.2%)
Rates of Burnout		
Personal Accomplishment	19 (34.5%)	7 (38.9%)
Depersonalization	18 (32.7)	12 (66.7%)
Emotional Exhaustion	21 (38.2%)	12 (66.7%)
Any Scale	35 (63.6%)	14 (77.8%)

*reported as median (inter-quartile range)

Curriculum Results

This curriculum has been in place since 2016 and has been sustainable. The core lecturers/session leaders have been engaged and participatory annually. There was no cost associated with the curriculum's development,

or its implementation. With respect to feasibility, time was found to be the biggest constraint. As time must be carved from the curriculum to add these sessions, the investigators noted that it was challenging to determine what curricular content could be abbreviated or cut to make time for the wellness curriculum.

Due to a low post-intervention survey response rate (only 32% of all residents responded to both surveys), we were unable to perform a reliable assessment of the curriculum's effect on resident burnout. Unsolicited verbal feedback for these sessions included that they were high yield, practical and informative.

DISCUSSION

Burnout was highly prevalent among surveyed EM residents. The cause is likely multi-factorial, including poor work-life balance, work hours, lack of control over scheduling, financial stresses, circadian disharmony, and the stresses inherent to the practice of EM, among other causes that vary by individual [3,4,9].

The implementation of a comprehensive curriculum that addresses multiple elements of wellness may assist residents with developing healthy lifestyle habits and mechanisms for coping with the stresses of medicine. We propose the adoption of a curriculum that mirrors the topics we presented above. Particularly, we recommend covering general subject areas including stress management, sleep hygiene, nutrition and fitness, financial wellness, mindfulness, and coping with difficult outcomes or interactions [15–22,30].

The reflection and second victim modules could be enhanced by regular group meetings where residents can safely discuss recent difficult cases or interactions. We did not include these as a part of our curriculum, but one residency class independently organized a series of such meetings with a trusted faculty member. Such sessions may facilitate residents' core medical education by reviewing cases of medical management, while also providing an avenue to process emotionally difficult cases. However, further study is required to confirm these hypotheses.

Clearly, a curriculum alone is not a fix for resident burnout, but it serves as an educational foundation for a more comprehensive wellness program. We suggest that programs also look at the impact of scheduling and hospital culture on resident wellness. Finally, we recommend programs consider the use of debriefings after difficult cases, and programs should create a plan to recognize and manage second victim syndrome in residents [31–33].

LIMITATIONS

Although we were successful at obtaining baseline wellness and burnout data from our residents, we were unsuccessful at obtaining reliable post-intervention data due to a low response rate on the second survey. We made numerous attempts to encourage participation in the second survey, and we suspect the low response rate reflects survey fatigue among the residents. Despite the lack of reliable post-intervention data, we believe that this curriculum provides residents with broad and actionable content to enhance their wellness as they progress through their careers.

The EM residency program where this curriculum was implemented is primarily based in an urban, public hospital. While many elements of the curriculum are likely to be universally applicable, some features or areas of emphasis may have limited relevance to residents or

practitioners in other specialties or in different practice environments.

CONCLUSION

Resident burnout is an epidemic in medical education. The use of a multi-faceted wellness program that includes a comprehensive curriculum and supportive culture may reduce resident burnout and create career-long habits that enhance physician wellness.

Conflicts of Interest:

The authors have no conflicts of interest to disclose.

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Appendix 1: Curricular Objectives

Managing Change and Transition

1. Understand the effects and tasks of change and transition
2. Identify various strategies for managing transition during residency effectively
3. Apply personal action steps that will facilitate positive adjustment to residency

Promoting Quality Sleep

1. Describe the symptoms, contributing factors, and effects of sleep deprivation and poor sleep quality
2. Develop an action plan for improving sleep quality
3. Create an individualized strategy for managing duty hours in a healthy way

Time Management

1. Recognize the importance of time management in fostering wellness
2. Identify an approach to efficient time management with the GPS (Goals, Priorities, Strategies) System
3. Utilize practical efficiency strategies for your hospital workday.

Stress Management Techniques

1. Identify 4 wellness issues related to stress during residency
2. Learn stress reduction techniques
3. Identify a personal goal to improve your health
4. Discuss techniques for implementing stress management, improving resiliency, and reducing burnout.

Work-Life Integration panel discussion with chief residents, junior faculty, and FSAP clinicians

1. Learn strategies for navigating and planning your career from individuals in various stages of their professional careers
2. Identify potential interventions for reducing burnout, facilitating suicide prevention and managing during difficult periods of training
3. Understand the importance of professional mentorship as part of career success.

The Art of Conflict Management

1. Define conflict
2. Learn the structure, dynamics and sources of conflict
3. Identify strategies for resolving conflict effectively during your hospital workday and beyond.

Palliative Care

1. List the steps in a death disclosure
2. Perform a death disclosure using a given structure, and receive feedback on your performance.
3. Demonstrate empathic communication skills.

Loan Repayment and Financial Advice

1. Develop an approach to budgeting
2. Understand the importance of saving early in your career
3. Learn about retirement investment options offered by your residency institution
4. Understand insurance basics and specifically review an approach to life and disability insurance
5. Review student loan best practices
6. Review requirements for the Public Service Loan Forgiveness program

Demands of Professionalism

1. Discuss self-regulation and regulation by peers, institutions and organizations
2. Discuss conflict in interactions with patients, their families, staff and peers
3. Determine priorities within the limits of finite resources
4. Discuss the impact of increased demand for patient care at the computer rather than at the bedside
5. Discuss continuing medical education

Burnout and Resilience

1. Define burnout
2. Review current trends in physician burnout
3. Discuss strategies to mitigate burnout
4. Define resilience
5. Review strategies/practices to foster resilience

Conflict Management

1. Review different styles of communication used when individuals are in conflict
2. Role play in scenarios involving the different communication styles
3. Discuss strategies for improved communication in conflict situations

Nutrition and Exercise

1. Discuss strategies for healthy nutrition while at work
2. Discuss time saving strategies to optimize nutrition
3. Discuss the overall health benefits of exercise
4. Discuss strategies for scheduling regular exercise
5. Discuss common barriers to ideal self-care

Mindfulness

1. Define mindfulness
2. Discuss applying mindfulness practices to everyday life
3. Walk through a guided meditation

Positive Coping Strategies

1. Identify positive and negative coping strategies
2. Discuss ways to foster positive coping strategies
3. Discuss barriers to coping in positive ways

Reflection

1. Discuss the importance of self-reflection
2. Discuss “3 Good Things” journaling strategy
3. Reflective writing for publication

Second Victim Syndrome

1. Define second victim syndrome
2. Discuss the stages of second victim syndrome
3. Discuss strategies for assisting a colleague who is a second victim
4. Understand how to perform a “hot debriefing” after a bad outcome

Working with the Difficult Patient

1. Cues to identifying situations that may escalate
2. De-escalation strategies - verbal strategies (redirection, isolation, soft tone of voice)
3. Understanding the role of other staff including security and nurses
4. Role play as the provider dealing with a difficult patient

Interviews/Job Hunt/Academic Job Updates

1. Discuss the different types of practice settings - academic vs community vs independent contractor vs large group
2. Discuss preparation of CV and cover letter
3. Review typical interview questions

Financial Planning for Graduating Residents

1. Discuss a personal philosophy toward spending and building wealth, including making big purchases
2. Develop an approach to saving and paying off debt
3. Review common savings accounts and develop a general hierarchy to funding them
4. Develop an approach to real estate, including buying versus renting and discuss types of mortgages.
5. Review life and disability insurance needs
6. Review the pros and cons to using financial advisors

Tips from the Attendings

1. Panelists discuss their pearls and pitfalls in their first 1-2 years of attending practice
2. Discuss barriers to wellness in early practice
3. Discuss strategies to improve wellness in early practice

Leadership/National Engagement

1. Discuss leadership and engagement within the specialty
2. Discuss why leadership “keeps you well”
3. Discuss strategies for getting involved
4. Explore faculty development courses to enhance leadership skills

Depositions/Intro to Medical Malpractice

1. Describe the purpose and structure of a deposition.
2. Identify common pitfalls in giving a deposition.
3. Describe the usual timeline and events in a medical malpractice lawsuit.
4. Identify key pearls to protect oneself from and in litigation.